Refine Search

Search Results -

Terms	Documents
L10 and L5	5

Database:
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L11

Refine Search | Recall Text | Clear | Interrupt

Search History

DATE: Friday, September 17, 2004 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR			
L11	L10 and l5	5	L11
L10	L3 and (postcard or "post-card" or (post adj card))	120	L10
L9	L5 and (postcard or "post-card" or (post adj card))	5	L9
L8	L7 and (postcard or "post-card" or (post adj card))	0	L8
L7	L5 and (convert$ and (combin$ or integrat$))	4	L7
L6	L5 and 705/26,27.ccls.	0	L6
L5	L3 and (single$ same (print$ with run$))	15	L5
L4	L3 and (single$ same print$)	453	L4
L3	(print$ same mail$).clm. and @ad<=20010703	940	L3
L2	L1 and (print$ same mail$)	3	L2
L1	4971513.pn. or 5881233.pn. or 6142531.pn. or 6209779.pn.	4	L1

END OF SEARCH HISTORY

h e b b cg b e e ch

(1)

First Hit Fwd Refs Previous Doc Next Doc Go to Doc#

End of Result Set

Generate Collection Print

L13: Entry 1 of 1 File: USPT Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5982994 A
TITLE: Network printer apparatus and LAN network system

Detailed Description Text (31):
The printing paper is conveyed to the transfer and separation portion 10e in synchronism with the formation of the toner image under the control of the stand-by roller 11b. The toner image is transferred to the printing paper, and the paper is then separated from the photosensitive drum 10a and fed to the heat fixing roller lid so as to fix the toner image on the paper. The paper is then conveyed toward the switchback roller 11g, which conveys the paper toward the stacker 11j.

Detailed Description Text (42):
The main functions of the printer controller 22 is reading the printing data of the highest priority from the hard disk 24 by reference to the queue, interpreting the language (e.g., Postscript, PCL (Printer Control Language), etc.) written in the printing data on the basis of a predetermined emulation program, converting the printing data into a dot image for each page (formation of image data), and controlling the engine or printing mechanism.

Detailed Description Text (164):
When all the files are designated and the item "Print" 42e is picked out, the menu controller 31a displays a printing format designating menu 43 (Step 557). If it is not necessary to designate the printing format, the item "Application" 43a is picked out (Steps 558, 559). Thereafter, the menu controller 31a creates the command/operands (print file, printing attribute file, file attribute information) for a request for printing to the network printer apparatus 20 and inputs them to the printing request controller 31d. The printing request controller 31d converts the command for a request for printing and the printing data, and transmits the converted command and data to the network printer apparatus 20 through the communication controller 31e such as, for example the TCP/IP protocol.

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h e b b g e e e f c e e e ge

L11: Entry 1 of 5 File: USPT Mar 18, 2003

US-PAT-NO: 6533324
DOCUMENT-IDENTIFIER: US 6533324 B2

TITLE: Advertising brochure and method for its use

DATE-ISSUED: March 18, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Zorn; Richard	Rivervale	NJ		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Moore U.S.A., Inc.	Grand Island	NY			02

APPL-NO: 09/ 799125 [PALM]
DATE FILED: March 6, 2001

PARENT-CASE:
This application is a division of Ser. No. 09/497,180, filed, Feb. 3, 2000, now U.S. Pat. No. 6,276,724, which is a division of Ser. No. 09/074,461, filed May. 8, 1998, now U.S. Pat. No. 6,129,346 issued Oct. 10, 2000.

INT-CL: [07] B42 D 15/00

US-CL-ISSUED: 283/56; 283/61, 40/124.06
US-CL-CURRENT: 283/56; 283/61, 40/124.06

FIELD-OF-SEARCH: 283/56, 283/63.1, 283/61, 283/62, 283/117, 281/2, 281/5, 281/38, 402/79, 383/127, 229/87.06, 229/92, 40/124.06

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	RE31710	October 1984	Jackson	
☐	4559727	December 1985	Lewyt	
☐	4576370	March 1986	Jackson	
☐	4722554	February 1988	Pettit	
☐	5114128	May 1992	Harris, Jr. et al.	

h e b b g e e e f c e e e ge

☐	5186443	February 1993	Manley et al.	
☐	5230501	July 1993	Melton	
☐	5269563	December 1993	Michlin	
☐	5308119	May 1994	Roshkoff	
☐	5314176	May 1994	Schmitt	
☐	5489123	February 1996	Roshkoff	
☐	5513914	May 1996	Faber	283/56
☐	5547175	August 1996	Graushar et al.	
☐	5590912	January 1997	Stevens	
☐	5636346	June 1997	Saxe	
☐	5687322	November 1997	Deaton et al.	
☐	5803499	September 1998	Tung et al.	283/56
☐	5845942	December 1998	Hansen et al.	
☐	5967557	October 1999	Dahlquist	283/56
☐	5970480	October 1999	Kalina	
☐	5992889	November 1999	Barnett et al.	283/56
☐	6028902	February 2000	Carson	
☐	6070147	May 2000	Harms et al.	

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
28 34 675	February 1980	DE	

ART-UNIT: 3722

PRIMARY-EXAMINER: Fridie, Jr.; Willmon

ATTY-AGENT-FIRM: Nixon & Vanderhye P.C.

ABSTRACT:

An advertising or promotional brochure is disclosed that is to be mailed in conjunction with a magazine or periodical. The brochure may include high-quality, glossy photographs, and be personalized with text and/or images that relate specifically to the magazine subscriber. In addition, the brochure may include coupons for sales discounts, bank promotional checks, and other promotions that may be redeemed by the magazine subscriber. The brochure may be embodied as a multi-page pamphlet and may have an appearance and cover similar to the magazine to which it is attached.

11 Claims, 12 Drawing figures

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h e b b g e e e f c e e e ge

9/898232

Refine Search

Search Results -

Terms	Documents
L5 and (print$ with ((double or two) with (side or face)))	17

Database:
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L6

Refine Search

Recall Text | Clear | Interrupt

Search History

DATE: Friday, September 17, 2004 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
DB=EPAB,JPAB,DWPI,TDBD; THES=ASSIGNEE; PLUR=YES; OP=OR			
L6	L5 and (print$ with ((double or two) with (side or face)))	17	L6
L5	L4 and @pd<=20010703	626	L5
L4	(print$ with (card$ or postcard or "post-card")) and (combin$ or integrat$) and (single$ or one$)	757	L4
L3	print$ and (combin$ or integrat$) and (single$ or one$)	18361	L3
DB=USPT; THES=ASSIGNEE; PLUR=YES; OP=OR			
L2	L1 and (combin$ or integrat$) and (single$ or one$)	4	L2
L1	4971513.pn. or 5881233.pn. or 6142531.pn. or 6209779.pn.	4	L1

END OF SEARCH HISTORY

Hit List

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 10 of 17 returned.

☐ 1. Document ID: JP 08183247 A

Using default format because multiple data bases are involved.

L6: Entry 1 of 17 File: JPAB Jul 16, 1996

PUB-NO: JP408183247A
DOCUMENT-IDENTIFIER: JP 08183247 A
TITLE: DOUBLE-SIDE ADHESIVE RECORDING SHEET

PUBN-DATE: July 16, 1996

INVENTOR-INFORMATION:

NAME	COUNTRY
IGUCHI, YUJI	
WAKAURA, SUKEJI	

INT-CL (IPC): B41 M 5/124; B32 B 7/06; B32 B 7/10

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 2. Document ID: JP 07064482 A

L6: Entry 2 of 17 File: JPAB Mar 10, 1995

PUB-NO: JP407064482A
DOCUMENT-IDENTIFIER: JP 07064482 A
TITLE: SHEET MATERIAL FOR PRINTING ON DOUBLE-SIDED CARD

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 3. Document ID: JP 02179775 A

L6: Entry 3 of 17 File: JPAB Jul 12, 1990

PUB-NO: JP402179775A
DOCUMENT-IDENTIFIER: JP 02179775 A
TITLE: PRINTER

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 4. Document ID: FR 2749976 A1

L6: Entry 4 of 17 File: EPAB Dec 19, 1997

PUB-NO: FR002749976A1
DOCUMENT-IDENTIFIER: FR 2749976 A1
TITLE: Card with integrated circuit carrying subdivided conductor tracks

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 5. Document ID: FR 2680278 A1

L6: Entry 5 of 17 File: EPAB Feb 12, 1993

PUB-NO: FR002680278A1
DOCUMENT-IDENTIFIER: FR 2680278 A1
TITLE: Integrated circuit and use in a module with several integrated circuit chips

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 6. Document ID: DE 20017198 U1

L6: Entry 6 of 17 File: DWPI Mar 8, 2001

DERWENT-ACC-NO: 2001-192817
DERWENT-WEEK: 200120
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Foldable or non-foldable fan for providing fresh air and combing the hair has a comb on one side of the two foldable rods

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 7. Document ID: US 6153039 A

L6: Entry 7 of 17 File: DWPI Nov 28, 2000

DERWENT-ACC-NO: 2001-201578
DERWENT-WEEK: 200120
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Novelty card forming method characterized in that upon removal of insert from card by user, foreground image is combined with background image to produce new and combined image

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw D

☐ 8. Document ID: ES 2203197 T3, DE 19840631 A1, WO 200013899 A1, EP 1045761 A1, DE 19840631 C2, EP 1045761 B1, DE 59905995 G

L6: Entry 8 of 17 File: DWPI Apr 1, 2004

DERWENT-ACC-NO: 2000-225388
DERWENT-WEEK: 200425

TITLE: Multilayer plastic card manufacture, in particular for producing identity cards, involving laminating card core and facing layers with slip resisting adhesive

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 9. Document ID: FR 2767949 A1, AU 9890808 A, WO 9912141 A1

L6: Entry 9 of 17 File: DWPI Mar 5, 1999

DERWENT-ACC-NO: 1999-183286
DERWENT-WEEK: 199931

TITLE: Combined game and learning aid

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 10. Document ID: CN 1205947 A

L6: Entry 10 of 17 File: DWPI Jan 27, 1999

DERWENT-ACC-NO: 1999-264434
DERWENT-WEEK: 199923

TITLE: Gold name card manufacture - comprises laminating gold foil with holes, patterned transparent sheet, plastic film and adhesive

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
L5 and (print$ with ((double or two) with (side or face)))	17

Display Format: - Change Format

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Hit List

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 11 through 17 of 17 returned.

☐ 11. Document ID: FR 2749976 A1

Using default format because multiple data bases are involved.

L6: Entry 11 of 17 File: DWPI Dec 19, 1997

DERWENT-ACC-NO: 1998-065741
DERWENT-WEEK: 199807
COPYRIGHT 2004 DERWENT INFORMATION LTD
TITLE: Card with integrated circuit carrying subdivided conductor tracks - has printed circuit tracks connecting integrated circuit to contact pads formed as two curved paths in parallel to reduce risk of breakage

INVENTOR: FLETOUT, C

PRIORITY-DATA: 1996FR-0007532 (June 18, 1996)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
FR 2749976 A1	December 19, 1997		008	H01L023/50

INT-CL (IPC): G06 K 19/077; H01 L 23/50; H05 K 1/02; H05 K 3/24

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 12. Document ID: CN 1135066 A

L6: Entry 12 of 17 File: DWPI Nov 6, 1996

DERWENT-ACC-NO: 1998-019618
DERWENT-WEEK: 199906
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Disposable anti counterfeit random code card and method for mfg. same

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw De

☐ 13. Document ID: FR 2724747 A1

L6: Entry 13 of 17 File: DWPI Mar 22, 1996

DERWENT-ACC-NO: 1996-181512
DERWENT-WEEK: 199620

COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Automatic machine for preparation of two-sided personalised documents - has computer controlling user interface, payment collection and double-sided printing by two printers in series in the paper path

☐ 14. Document ID: US 5227615 A

L6: Entry 14 of 17 File: DWPI Jul 13, 1993

DERWENT-ACC-NO: 1993-235233
DERWENT-WEEK: 199329
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Portable terminal device for IC card and memory card - has printed wiring board with two sides, interface for information data exchanging card provided on each side and two cards disposed in parallel

☐ 15. Document ID: FR 2664239 A

L6: Entry 15 of 17 File: DWPI Jan 10, 1992

DERWENT-ACC-NO: 1992-098895
DERWENT-WEEK: 199213
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Package for holding-displaying group of containers - comprises card panel cut and folded into parallelepiped shape with apertures in one side to receive ends of containers

☐ 16. Document ID: DD 269246 A

L6: Entry 16 of 17 File: DWPI Jun 21, 1989

DERWENT-ACC-NO: 1989-340593
DERWENT-WEEK: 198947
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Smart card with single or double sided thin film printed circuit foils - comprises integrated circuit passivated bare chips inserted at perforations at bonding pads edge contacts and reinforcing covering layer

☐ 17. Document ID: EP 70225 A, DE 3267009 G, EP 70225 B, FR 2509563 A, JP 58017694 A, US 4514786 A

L6: Entry 17 of 17

L1: Entry 1 of 4 File: USPT Apr 3, 2001

US-PAT-NO: 6209779
DOCUMENT-IDENTIFIER: US 6209779 B1

TITLE: Laminated mailer blank with transparent window

DATE-ISSUED: April 3, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fabel; Warren M.	Delray Beach	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Laser Substrates, Inc.	Boca Raton	FL			02

APPL-NO: 09/ 449440 [PALM]
DATE FILED: November 24, 1999

PARENT-CASE:
RELATION TO OTHER PATENT APPLICATIONS This is a continuation-in-part of U.S. patent application Ser. No. 09/132,036, filed Aug. 11, 1998, which is a continuation-in-part of U.S. patent application No. 08/434,416 filed May 3, 1995, now U.S. Pat. No. 5,791,553, which is a continuation-in-part of U.S. patent application Ser. No. 08/240,869, filed May 10, 1994, now abandoned.

INT-CL: [07] B65 D 27/00

US-CL-ISSUED: 229/92.3; 229/92.8, 229/301
US-CL-CURRENT: 229/92.3; 229/301, 229/92.8

FIELD-OF-SEARCH: 229/92.8, 229/92.1, 229/92.3, 229/301

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	5752647	May 1998	Schubert et al.	229/92.1
☐	5836622	November 1998	Fabel	229/92.8 X
☐	5950910	September 1999	Petkovsek	229/92.8
☐	6019280	February 2000	Peterson	229/305

ART-UNIT: 377

PRIMARY-EXAMINER: Pascua; Jes F.

ATTY-AGENT-FIRM: Whotlock; Ted W.

ABSTRACT:

A mailer blank having a return receipt post card which can be printed on both faces thereof by a single pass through a non-impact, simplex printer is described. The return receipt post card is configured to present all areas to be printed with variable information on a single face of the postcard, thereby allowing printing of all variable information in a single pass through the printer. The post card is provided with fold lines such that a unique folding pattern results in formation of a post card of standard size and uniform thickness, and having the variable printed information ultimately positioned at desired locations on both sides (faces) of the post card.

12 Claims, 22 Drawing figures

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L1: Entry 2 of 4 File: USPT Nov 7, 2000

US-PAT-NO: 6142531
DOCUMENT-IDENTIFIER: US 6142531 A

TITLE: Universal tamperproof laser identification cards and single pass post cards

DATE-ISSUED: November 7, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Harris, II; C Whit	Fort Walton Beach	FL	32548	

APPL-NO: 09/ 336857 [PALM]
DATE FILED: June 21, 1999

INT-CL: [07] B42 D 15/00

US-CL-ISSUED: 283/74; 283/75, 283/106
US-CL-CURRENT: 283/74; 283/106, 283/75

FIELD-OF-SEARCH: 283/74, 283/75, 283/77, 283/36, 283/106, 283/107, 283/109

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4510006	April 1985	Lawson	283/74
☐	5074593	December 1991	Grosso	283/77
☐	5372385	December 1994	Sufuentes et al.	283/61
☐	5403236	April 1995	Greig	283/74
☐	5601313	February 1997	Konkol et al.	
☐	5653472	August 1997	Huddleston et al.	
☐	5662976	September 1997	Popat et al.	428/40.1
☐	5664725	September 1997	Walz	
☐	5746450	May 1998	Petkovsek	
☐	5765875	June 1998	Rowley	283/74
☐	5873606	February 1999	Haas et al.	283/75
☐	5873607	February 1999	Waggoner	283/81

☐	5895074	April 1999	Chess et al.	283/74
☐	5915733	June 1999	Schnitzer et al.	283/74
☐	6013154	January 2000	Thomas-Cote	283/81

ART-UNIT: 372

PRIMARY-EXAMINER: Wellington; A. L.

ASSISTANT-EXAMINER: Carter; Monica

ATTY-AGENT-FIRM: Kroll; Michael I.

ABSTRACT:

A foldable card for providing information to a user including a backing sheet, a printable sheet and an adhesive material on one side of the printable sheet releasably securing the backing and printable sheets together. The printable sheet includes first and second sections having substantially similar dimensions connected together at a fold line. Information is printable on a side of the first and second sections opposite the adhesive material during a single pass through a printer. When the printable sheet is removed the backing sheet and folded along the fold line, the adhesive material on the first and second sections secures the first and second sections together allowing the information printed on both the first and second section to be viewable. The foldable card may be produced in any shape such as a post card or I.D. tag. When used as an I.D. tag the first section may include a window through which an item between the first and second sections is viewable. First and second tabs extend from a respective one of the first and second sections and include an adhesive material on one side thereof causing them to be secured together when the foldable card is folded along the fold line and slits extending therethrough for receiving a button and releasably securing the folding card to clothing of a user. An extension portion extends from one tab and includes an adhesive material on one side thereof for selectively adhering the foldable card to an object.

11 Claims, 15 Drawing figures

Previous Doc Next Doc Go to Doc#

L1: Entry 3 of 4 File: USPT Mar 9, 1999

US-PAT-NO: 5881233
DOCUMENT-IDENTIFIER: US 5881233 A

TITLE: Facsimile mail apparatus

DATE-ISSUED: March 9, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Toyoda; Kiyoshi	Tokyo			JP
Bandou; Tatsuo	Tokyo			JP
Sawada; Toshihisa	Chiba-ken			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Matsushita Electric Industrial Co., Ltd.	Osaka			JP	03

APPL-NO: 08/ 608199 [PALM]
DATE FILED: February 28, 1996

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	7-045847	March 6, 1995

INT-CL: [06] H04 N 1/00

US-CL-ISSUED: 395/200.48; 358/402, 358/440
US-CL-CURRENT: 709/233; 358/402, 358/440

FIELD-OF-SEARCH: 395/200.01, 395/200.04, 395/200.09, 395/200.3, 395/200.48, 395/200.36, 358/902, 358/400, 358/405, 358/440, 364/514A, 364/514R

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	4941170	July 1990	Herbst	358/402 X
☐	5115326	May 1992	Burgess et al.	358/440
☐	5461488	October 1995	Witek	

☐	5479411	December 1995	Klein	358/402 X
☐	5499108	March 1996	Cotte et al.	358/400

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0429072	May 1991	EP	
0 581 722	February 1994	EP	
0615377	September 1994	EP	
2172348	July 1990	JP	
03-245 655	November 1991	JP	
06-350 641	December 1994	JP	
08-022 503	January 1996	JP	
9209169	May 1992	WO	
9403994	February 1994	WO	
9 408 419	April 1994	WO	

ART-UNIT: 274

PRIMARY-EXAMINER: Kemper; Melanie

ATTY-AGENT-FIRM: Pollock, Vande Sande & Amernick

ABSTRACT:

An electronic mail system connected to a network includes a section for converting an image of a document surface into corresponding document image data, and a section for compressing the document image data into compression-resultant image data. The electronic mail system also includes a section for converting the compression-resultant image data into corresponding image data of a given electronic-mail format, a section for receiving information of an electronic-mail destination address, and a section for transmitting the image data of the electronic-mail format toward the electronic-mail destination address via the network. The electronic mail system may further include a section for receiving image data in an electronic mail, a section for converting the received image data into corresponding received image data of a given facsimile format, a section for expanding the received image data of the facsimile format into expansion-resultant image data, and a section for printing the expansion-resultant image data.

27 Claims, 33 Drawing figures

Previous Doc Next Doc Go to Doc#

L1: Entry 4 of 4 File: USPT Nov 20, 1990

US-PAT-NO: 4971513
DOCUMENT-IDENTIFIER: US 4971513 A

TITLE: Method of making up batches of small items

DATE-ISSUED: November 20, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bergerioux; Jean-Marcel	Chateauneuf sur Isere			FR
Pavie; Claude	Houilles			FR
Plent; Christian	Bourg Les Valence			FR

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Societe Anonyme dite: Compagnie Generale d'Automatisme CGA-HBS	Paris			FR	03

APPL-NO: 07/ 368508 [PALM]
DATE FILED: June 20, 1989

PARENT-CASE:
This is a divisional of application Ser. No. 07/030,648, filed Mar. 27, 1987, now Pat. No. 4,874,281.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
FR	86 04449	March 27, 1986

INT-CL: [05] B65G 37/00

US-CL-ISSUED: 414/786; 414/285
US-CL-CURRENT: 414/807; 414/285

FIELD-OF-SEARCH: 198/370, 198/477.1, 198/706, 198/358, 198/356, 198/366, 198/348, 198/424, 198/349.5, 209/583, 209/900, 209/698, 414/786, 414/416, 414/417, 414/403, 414/404, 414/269, 414/270, 414/271, 414/273, 414/285, 414/406, 414/331, 186/55, 186/56, 186/58

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3055486	September 1962	Meyer	198/706
☐	3757939	September 1973	Henig	209/900 X
☐	3967740	July 1976	Molins	414/331
☐	4542808	September 1985	Lloyd, Jr. et al.	209/564 X
☐	4567988	February 1986	Weibel	209/698 X
☐	4651863	March 1987	Reuter et al.	414/331 X
☐	4669047	May 1987	Chucta	414/331 X
☐	4688678	August 1987	Zue et al.	209/698 X

ART-UNIT: 317

PRIMARY-EXAMINER: Werner; Frank E.

ATTY-AGENT-FIRM: Sughrue, Mion, Zinn, Macpeak & Seas

ABSTRACT:

The installation comprises a delivery conveyor (4) for delivering unit items in buckets (5). A station (3) injects unit items onto the delivery conveyor. A sorting conveyor (6) carries packs (8) corresponding to respective batches to be made up. The sorting conveyor is disposed relative to said delivery conveyor so as to establish at least one item transfer zone therebetween. A central control unit (10) ensure that desired coincidences occur between item-containing buckets (5) and packs (8) for receiving the items, with the control units controlling the transfer of items from the buckets to the packs. The invention is particularly applicable to making up batches of items in response to orders therefor.

5 Claims, 28 Drawing figures

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First Hit Fwd Refs Previous Doc Next Doc Go to Doc#
End of Result Set

Generate Collection Print

L19: Entry 1 of 1 File: USPT Jul 10, 2001

US-PAT-NO: 6257624
DOCUMENT-IDENTIFIER: US 6257624 B1

TITLE: Single side imaged postal form assembly

DATE-ISSUED: July 10, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Fabel; Warren M.	Delray Beach	FL		

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Laser Substrates, INC	Boca Raton	FL			02

APPL-NO: 09/ 102852 [PALM]
DATE FILED: June 23, 1998

PARENT-CASE:
CROSS REFERENCE TO RELATED APPLICATIONS This is a continuation-in-part of U.S. patent application Ser. No. 08/049,946, filed Apr. 20, 1993; U.S. patent application Ser. No. 60/087,595, filed Jun. 1, 1998 and U.S. patent application Ser. No. 09/097,246, filed Jun. 12, 1998.

INT-CL: [07] B42 D 15/02

US-CL-ISSUED: 283/62; 402/79, 283/61, 283/116, 462/19, 462/25, 462/26
US-CL-CURRENT: 283/62; 283/116, 283/61, 402/79, 462/19, 462/25, 462/26

FIELD-OF-SEARCH: 402/79, 283/61, 283/62, 283/116, 462/19, 462/25, 462/26

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3111449	November 1963	Gold et al.	428/192
☐	4418865	December 1983	Bowen	
☐	4682793	July 1987	Walz	
☐	4865669	September 1989	Schmidt	

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☐	4885198	December 1989	Kimura	
☐	5173081	December 1992	Greig	
☐	5183203	February 1993	Sanders	
☐	5501393	March 1996	Walz	
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☐	5664725	September 1997	Walz	
☐	5697648	December 1997	Petkovsek	
☐	5746450	May 1998	Petkovsek	
☐	5836622	November 1998	Fabel	283/62

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0007398	January 1991	JP	

ART-UNIT: 372

PRIMARY-EXAMINER: Howell; Daniel W.

ASSISTANT-EXAMINER: Henderson; Mark T.

ATTY-AGENT-FIRM: Whitlock; Ted W.

ABSTRACT:

A form for creating a postcard having printing on both sides includes a front sheet and a back sheet, which are laminated using a pressure sensitive adhesive on a back surface of the front sheet. A fold line extends across the front sheet, while a tear line underlying the fold line extends across the back sheet. A gap in the adhesive preferably extends along the fold line. On one side of the fold line opposite to the direction of the gap, the inner surface of the back sheet has a release coating restricting the adhesion of the adhesive layer. After printing on the front surface of the front sheet, the section of the back sheet having this release coating is removed and discarded, and the front sheet is folded along the fold line, thereby providing a document having printing on both sides and a thickness sufficient for a postcard.

18 Claims, 50 Drawing figures

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L19: Entry 1 of 1 File: USPT Jul 10, 2001

DOCUMENT-IDENTIFIER: US 6257624 B1
TITLE: Single side imaged postal form assembly

Abstract Text (1):
A form for creating a postcard having printing on both sides includes a front sheet and a back sheet, which are laminated using a pressure sensitive adhesive on a back surface of the front sheet. A fold line extends across the front sheet, while a tear line underlying the fold line extends across the back sheet. A gap in the adhesive preferably extends along the fold line. On one side of the fold line opposite to the direction of the gap, the inner surface of the back sheet has a release coating restricting the adhesion of the adhesive layer. After printing on the front surface of the front sheet, the section of the back sheet having this release coating is removed and discarded, and the front sheet is folded along the fold line, thereby providing a document having printing on both sides and a thickness sufficient for a postcard.

Application Filing Date (1):
19980623

Brief Summary Text (7):
Non-impact printers are currently limited by an ability to print only on a single side of one sheet of paper at a given time. While it is possible to turn the paper over to be run through the printer again, to thereby print on both sides, automated devices which accomplish this function are not commonly available with conventional office non-impact printers found in most offices. Even if one could print on both sides of the form by manually feeding the same form again, this practice eliminates batching, whereby a large number of blank forms are placed in a paper feeding tray and all forms are produced at one time. addition, U.S. Postal Services requires that certain indicia and facing identification marks (FIMs) be placed at the edge of the page, form, or postcard, or that the indicia is placed less than 1/4 inch, typically about 1/8 inch, from the edge. Non-impact printers will print only 1/4 inch or more from the edge of a page passed therethrough. Thus, the use of non-impact printers with standard forms cannot meet U.S. Postal Service standards.

Brief Summary Text (8):
One of the other advantages of impact printing, particularly those impact printers using pin feed paper handling mechanisms, is the ability to print on paper stocks of significantly different thicknesses. For example, conventional paper stock has thicknesses of about 0.003 to 0.0035 inch. Post cards required by the U.S. Postal Service have a thickness of between 0.007 inch and 0.0095 inches. However, feeding a relatively thick card stock through a conventional office non-impact printer may cause problems with the paper handling mechanisms and as well as with the copy quality. Thus, many existing forms, such as the last sheet of the form described in U.S. Pat. No. 4,682,793 to Walz, which has a thickness within the range of a standard postcard, cannot be used with non-impact printers. Thus, many documents designed to be sent through the mail as postcards, such as is needed for certified or registered mail, cannot be automatically generated with modern office non-impact printers.

Drawing Description Text (19):
FIG. 17 is a transverse cross-sectional view of an attachment tab portion of the embodiment of FIG. 13, shown after a portion of the embodiment is folded into a postcard configuration as indicated by section lines XVII--XVII in FIG. 13;

Drawing Description Text (25):
FIG. 23 is a transverse cross-sectional view of an attachment tab portion of the variation of FIG. 21, shown after a portion of the embodiment is folded into a postcard configuration as indicated by section lines XVII--XVII in FIG. 13;

Detailed Description Text (7):
FIGS. 1 through 4 show the details of construction of a first embodiment of this invention, which provides a means for generating two postcards from a single form 10. Form 10 is preferably of a size which can be conveniently fed through a standard image forming device, such as a standard impact or non-impact printer commonly found in many offices, either as a single document, or as a stack of documents from which a number of postcards will be made. Form 10 is constructed by laminating a the interior facing side 8 of a front sheet 12 to the interior facing side 9 of a back sheet 14. Sheets 12 and 14 may be made by applying adhesive and release material coatings to various types of paper stocks, which are preferably of ordinary thickness, about 0.003 inch. While paper is preferably used for sheets other materials capable of receiving printed images and capable of adhesive attachment can be used as well.

Detailed Description Text (8):
FIG. 1 shows a front view of form 10 and of the image receiving surface 7 of front sheet 12, which is divided into two fold line 18 is also applied to facilitate the proper folding of the form into two postcards. FIG. 2 shows a view of the interior facing side of front sheet 12, indicating two adhesive panels 20, preferably composed of a pressure sensitive adhesive material 19, which may be applied by coating during the process of manufacturing sheet 12. A central gap 21 in the coating, having a width of about a half inch, preferably extends along one side of fold line 18 to further facilitate the subsequent proper folding of form 10 into postcards. A peripheral gap 22 in the coating preferably extends along two or more edges of sheet 12 to minimize a potential problem of adhesive 19 being squeezed outward from between front sheet 12 and rear sheet 14 during the application of pressure to fuse toner in a laser printer.

Detailed Description Text (10):
FIG. 4 is a transverse cross-sectional view of form 10, taken across lines IV--IV of FIG. 1, after assembly of form 10 by pressing the interior side 8 of front sheet 12 (shown in FIG. 2) against the interior side 9 of back sheet 14 (shown in FIG. 3), leaving the outward facing side 6 of back sheet 14 and image receiving side 7 of front sheet 12 exposed. While back sheet 14 adheres to both adhesive panels 20 of front sheet 12, the portion of back sheet 14 having release panel 26 is releasably adhered, so that it can be subsequently peeled off and torn away, as seen by the dashed lines. Gap 21 in the adhesive coating 19 overlies a central edge portion of release panel 26. it should be noted that when sheets 12 and 14 are assembled as described in FIGS. 1-4, transverse tear line 23 underlies transverse tear line 16 to allow the subsequent separation of form 10 into two halves. of form 10 is shown in FIGS. 5 and 6, in which two postcards are formed by first printing address and text information on form 10 and thereafter, by dividing form 10 into two postcards by separating it along aligned tear lines 16 and 23, by peeling away release panel 26 and by folding the exposed adhesive 19 covered portion of front sheet 12 over the remaining portion of back sheet 14. FIG. 5 schematically illustrates the appearance of form 10 after the printing step. Each postcard has an address side 28 and a text side 30, with the printed material on each side being preferably oriented, as shown, to be read away from fold line 18.

Detailed Description Text (12):
FIG. 6 shows the configuration into which each postcard is folded after the address information 28 and text information 30 is printed, panel 26 is removed and the adhesive 19 exposed portion of front sheet 12 is folded over and attached to the remaining portion of back sheet 14. More specifically, the two postcards shown in FIG. 5 may be separated by separation along tear lines 16 and 23, either before of after folding. Before folding, the side of back sheet 14 upon which release panel 26 is coated is peeled back from front sheet 10 and discarded. The postcard being formed is then folded along central fold line 18, with the adhesive panel 20 exposed by the removal of release panel 26 being brought into contact with the rear surface of the remaining side of back sheet 14. The postcard thus formed is pressed together to form a permanent assembly on both sides of the pressure sensitive adhesive 19 in panel 20.

Detailed Description Text (13):
In this way, a postcard is formed, having a thickness of three sheets of paper, that is twice the thickness of front sheet 12, together with the thickness of back sheet 14, and the relatively negligible thickness of two layers of adhesive 19. Before the separation and folding processes, the back sheet 14 acts to protect the entire adhesive 19 coated surfaces from contact with other objects. After the folding process, half of the back sheet 14 acts to increase the thickness and stiffness of the postcard.

Detailed Description Text (14):
FIG. 7 illustrates an alternative technique to print information on a form 10 using commercially available software. In FIG. 7, each postcard has an address side 34 and a text side 36, with the printed material on address side 34 being oriented to be read downward from the adjacent fold line 18, and with the material on text side 36 being oriented to read downward from a short side 38 of form 10. The primary advantage of the printing format shown in FIG. 7 is that it can be produced using a standard word processing program, such as Word Perfect 5.1, with a system having "landscape" printing mode capabilities. A method for obtaining a format with type running in two directions in this way is described, for example, in Using Word Perfect 5.1, Special Edition, Que Corporation, Carmel, Ind., 1989, pp. 1134-1138.

Detailed Description Text (20):
The size of form 10, before folding, is preferably a size which may be conveniently run through a standard printer, and the size of the postcards formed by this process is preferably one which is acceptable to postal authorities for mailing at the reduced postal rates available for postcards. For example, form 10 may be 8.4 by 11 inches, thereby forming two 4.2 by 5.5 inch postcards.

Detailed Description Text (21):
Alternatively, a conventional 8.5 by 11 inch sheet of paper with a discardable edge portion may be used to bring the size of the resulting postcards within Postal Service regulations. By using forms 10 having a size as noted above permits a large number of forms 10 to be stacked in a printer feeding tray for sequential feeding through the standard paper feed mechanism of a printer. Thus, the present invention provides the advantage of using special forms with a standard office printer under the control of a computer system, whereby a large number of documents of similar types, having variations in printed text, can be generated in a more or less continuous process, without a necessity for loading individual forms into the printer.

Detailed Description Text (22):
Referring now to FIG. 8, a front elevational view of a second embodiment of the present invention is shown, in which a continuous form 40 is provided for use in a printer having a capability of printing continuous documents. In FIG. 8, features similar to those discussed above with respect to form 10 are referenced with like numerals. A central fold line 18 is provided for use as previously described, with

a number of transverse tear lines 16 being included to facilitate the separation of form 40 into many individual postcards after printing. Most other aspects of form 40 are as previously described with respect to form 10, with the transverse cross-section of form 40, taken as indicated by section lines IV--IV, being also shown in FIG. 4. Thus, form 40 includes front and back sheets, with a back sheet including transverse tear lines underlying tear lines 16 and central fold line 18. The rear surface of the front sheet of form 40 includes a pair of adhesive panels 20 extending the length of form 40, and the front surface of the back sheet of form 40 includes a release material 27 at one side of a central tear line 24.

Detailed Description Text (27):
FIG. 12 shows a postcard application of form 50. Two postcards are printed with address data 64 and text data 66, to be separated along a longitudinal tear line 68 and folded along fold line 54. Text and data information is preferably all oriented to read downward from one of the longer edges 70 of the form. Tear line 61 underlies tear line 64 when sheets 52 and 53 are assembled together to make form 50. One advantage of this configuration arises from the fact that a conventional relationship between the orientation of text and address information occurs when all text and address information is oriented in the same direction during the printing process. This orientation can be easily attained using the standard "landscape" mode of a printer.

Detailed Description Text (43):
Referring again to FIG. 13, return receipt 86 is preferably configured to provide the functions of Postal Service Form 3811, being divided into a lower section 144 and an upper section 146 by a fold line 148. The postcard is formed after being printed, according to the folding method generally described in reference to FIGS. 1 through 7. Return receipt 86 is preferably pre-printed to form a background color with a half tone screen, using the same green ink used to preprint information on sender's receipt section 84 and certified mail label 85. The half tone screen permits simulation of the light green card stock used by the U.S. Postal Service to make Form 3811 easily recognizable. Other pre-printed markings on return receipt 86 are preferably black. On the reverse side of Form 3811, upper section 146 includes a number of pre-printed blocks required on return receipt 86, such as block 150, which includes pre-printed instructions for the sender, block 152, which provides spaces to indicate whether additional services are desired, and block 154, which provides a space for the signature of the addressee.

Detailed Description Text (46):
Referring again to FIG. 15, a tear line 138 underlies tear line 132, and the front surface of a section 168 of back sheet 75, underlying upper section 146, is coated with release material 77. Section 168 is separable from the remainder of back sheet 75 by means of a transverse tear line 170 which underlies fold line 148 of front sheet 74. Before return receipt 86 is folded into postcard form, section 164 (shown in FIG. 13) is detached and discarded. Next, detachable backing section 168 is detached and discarded, tearing along tear line 170 to reveal an intact adhesive material 76 layer of first sheet 74, previously adjacent to the coated surface of panel 168. Then, the remaining portion of return receipt 86 is folded along fold line 148, with adhesive material 76 layer forming a tight-bond with the rear surface of a panel 174 of back sheet 75. In order to facilitate the alignment of adhesive 76 with the rear surface of panel 174, a gap 175, about a half inch in width, is provided in the adhesive material 76, extending upward from fold line 148. The structure of various elements, before and after the folding procedure, is similar to that which has been previously described and shown in FIGS. 4 and 6, respectively.

Detailed Description Text (47):
As shown in FIG. 16, various types of information, such as instructions on the use of form 72, may be printed on the outward facing surface of back sheet 75, which is the rear surface of form 72 after sheets 74 and 75 are assembled. For example, even

through detachable backing section 168 is removed and discarded during the process of forming return receipt 86 into a postcard, its back surface can be used for providing pre-printed information regarding how the various parts of form 72 should be separated, folded, and used. Other sections of back sheet 75 are not discarded; remaining instead with corresponding sections of front sheet 74. The rear surfaces of such sections are particularly useful for providing pre-printed information relative to the use of these particular sections. For example the back sheet portion 176 of sender's receipt 84 can be used in this way.

Detailed Description Text (49):
Attachment of return receipt 68 to a mailing envelope or package will now be explained, with particular reference being made to FIGS. 17 and 18, which are transverse cross-sectional views of one of the tabs 177, together with adjacent portions of front section 144 and reverse section 146. FIG. 17 is taken as indicated--by section line XVII--XVII in on lower section 144 of FIG. 13 after return receipt 86 has been folded into a postcard configuration along fold line 148.

Detailed Description Text (50):
Referring to FIG. 17, when return receipt 86 is folded into a postcard configuration, lower section 144 and rear section 146 of front sheet 74 become outer layers in an assembly having three layers, including a central layer formed by backing panel 174, with single adhesive material 76 layers between each of the paper layers. This portion of FIG. 17 is similar to FIG. 6. However, underlying tab 177, which extends outward from lower section 144, is release material layer 182 for limiting the adhesive attraction between tab 177 and tab 178.

Detailed Description Text (56):
Referring to FIG. 20, after the removal of tabs 185 and 178, the outer surface of section 146 and the adhesive material 76 layer on tabs 177 both face in the same direction, in which the form 188 is subsequently applied for attachment to the mail being sent. The difference between the previously explained version, in which the tabs were folded, as shown in FIG. 18, and this version, in which the tabs are left extended, as shown in FIG. 20, may be considered to lie in the fact that, in the previously explained version of FIG. 18, the section of the postcard to be placed against the mail to be sent is attached to the back sheet 75 along a surface without a release material layer, while, in this version of FIG. 20, the section to be placed against the mail to be sent is attached to back sheet 75 along a surface with a release material layer. This difference reverses the way the printed information lies with respect to the back sheet section removed prior to folding, and thereafter to the location of release material layers 182 on back sheet 75. When the certified mail is delivered, the central portion of form 188 is removed for return by tearing along tear lines 184. The method of FIG. 20 has the disadvantage, compared to the method of FIG. 18, of lengthening the document to be attached to the certified mail to be sent, the elimination of a folding step simplifies the use of form 188, while providing somewhat greater strength to hold the attachment tabs to the rest of the form during the mailing procedure.

Detailed Description Text (57):
A second alternative version for providing attachment tabs will now be discussed, with particular reference being made to FIGS. 21 through 24. Specifically, FIG. 21 shows a partial rear elevational view of the front sheet of this version, FIG. 22 shows a front elevational view of the back sheet of this version, FIG. 23 shows a transverse cross-sectional view of an attachment tab portion of this version after folding into a postcard configuration, and FIG. 24 shows a similar transverse cross-sectional view after certain tabs are removed to expose the adhesive material 76 layer for attachment.

Detailed Description Text (102):
Another significant advantage of each of the certified mail form embodiments

described above is that the thickness of the form is substantially constant throughout. Other existing forms generally have different thickness for the postcard and remaining documents on the form and this differing thickness can cause jams in the feeding system of common printers.

CLAIMS:

1. A unitary mailing form having discrete sections for printing mailing indicia or mailing information thereon by a non-impact printer, said form comprising a front sheet having die-cuts or perforations defining said discrete sections on which mailing information or mailing indicia are printed on a front face, a back face of the front sheet having adhesive material or adhesive release material patternly disposed thereon, a back sheet having die-cuts or perforations substantially conforming to the die-cuts or perforations of the front sheet, said back sheet having a front face on which adhesive release material is patternly disposed thereon, and a back face on which instructional information can be printed.

3. The mailing form of claim 1, wherein mailing indicia and addressee information are printed on a single discrete section.

4. The mailing form of claim 1, wherein printed information is adapted for certified mail.

5. The mailing form of claim 1, wherein the printed information is adapted for registered mail.

14. The mailing form of claim 3 wherein the mailing indicia and addressee information section folds along a non-die-cut fold line such that said section folds over a leading edge of an envelope to prevent jamming of a printer feed mechanism as the envelope is processed through a simplex printer.

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L14: Entry 1 of 1 File: USPT Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5982994 A
TITLE: Network printer apparatus and LAN network system

Detailed Description Text (27):
The paper feeding system is composed of a pick roller 11a for picking the cut paper from the hopper 1a, 1b or 1c, a stand-by roller 11b, a feed roller 11c for feeding the picked paper to the stand-by roller 11b, a heat fixing roller 11d, a conveyor passage 11e for feeding the paper to the stand-by roller for the purpose of printing on the reverse side of the paper, a runner 11f for directing the rear end of the paper supplied from the heat fixing roller toward the conveyor passage 11e, a switchback roller 11g for conveying the paper supplied from the heat fixing roller 11d first in the direction of discharge and then conveying it to the conveyor passage 11e, a guide roller 11h for guiding paper in the direction of discharge, a discharge roller 11i, and a stacker 11j for accommodating the discharged paper. The reference numeral 11m represents a conveyor passage for introducing the printing paper supplied from a later-described large-capacity hopper to the processing system in the direction indicated by the arrow A'.

Detailed Description Text (32):
In the case of single-side printing, the paper is fed to the guide roller 11h and the discharge roller 11i so as to be discharged into the stacker 11j. In the case of double-sided printing, when the rear end of the printed paper reaches the runner 11f, the switchback roller stops the conveying operation. When the paper is stopped, the runner 11f, which rotates counterclockwise, directs the rear end of the paper toward the conveyor passage 11e. The conveyer roller of the conveyor passage 11e feeds the paper to the stand-by roller 11b and turns over it. Thereafter, in the same way with the top side printing, a toner image is transferred onto the back side of the paper fed from the stand-by roller 11b by the transfer and separation portion 10e, and fixed with the heat fixing roller 11d. The printed paper is then conveyed toward the switchback roller 11g, which conveys the paper toward the stacker 11j. The discharge roller 11i discharges the paper into the stacker 11j.

Detailed Description Text (110):
Printing format (single-side or both-side printing, portrait (long lengthwise) or landscape (long sideways), etc.)

Detailed Description Text (222):
If there is no data error at the step 831, whether or not the paper has run out is judged (Step 834). In the case of providing a mailbox mechanism as in the second embodiment, whether or not the cover of the mailbox is open is judged (Step 833), and if the cover is open, the processing at the step 832 and thereafter is executed.

Detailed Description Text (223):
If the paper has run out at the step 834, notice of paper shortage is issued (Step 835). The operator panel controller 22-10 displays the production of a data error (Step 836) and the status controller 22-9 transmits the notice of data error to the

communication controller 21-7 of the FEP 21 through the input/output controller 22-1 (Step 837).

Detailed Description Text (356):
(13) a network printer apparatus has a function of displaying the job queue information, job status (waiting for printing, during printing, during holding, etc) and the usage ratio of the printer as the and a function of changing the printing attributes (paper size, selected hopper, both-side/single-side printing, printing format such as portrait and landscape) and the priority in the job queue;

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L7: Entry 2 of 4 File: USPT Nov 9, 1999

US-PAT-NO: 5982994
DOCUMENT-IDENTIFIER: US 5982994 A

TITLE: Network printer apparatus and LAN network system

DATE-ISSUED: November 9, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mori; Yoshio	Kawasaki			JP
Abe; Fumitake	Kawasaki			JP
Ishiguro; Keiji	Kawasaki			JP
Ueyama; Satoru	Kawasaki			JP
Ito; Mari	Kawasaki			JP
Sato; Toshimi	Kawasaki			JP
Saitoh; Yasushi	Kawasaki			JP
Kida; Yasunari	Kawasaki			JP

ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Fujitsu Limited	Kanagawa			JP	03

APPL-NO: 08/ 676724 [PALM]
DATE FILED: July 8, 1996

PARENT-CASE:
This is a division of application Ser. No. 08/292,110, filed Aug. 17, 1994.

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	5-286806	November 16, 1993
JP	6-048423	March 18, 1994

INT-CL: [06] G06 F 15/00

US-CL-ISSUED: 395/114; 395/117
US-CL-CURRENT: 358/1.15; 358/1.18

FIELD-OF-SEARCH: 395/100, 395/101, 395/109, 395/112, 395/114, 395/117, 395/329, 395/800, 395/115, 395/116, 395/294, 395/304, 271/296, 271/298, 271/290, 399/91, 345/522, 345/523, 345/526, 345/508, 358/518, 358/530, 358/448, 358/444, 358/450, 358/453, 358/462, 382/176, 382/266, 382/276, 382/277

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected | Search ALL | Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
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☐	5113222	May 1992	Wilson et al.	399/81
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☐	5220674	June 1993	Morgan et al.	395/800
☐	5303336	April 1994	Kageyama et al.	395/114
☐	5308058	May 1994	Mandel et al.	271/289
☐	5328169	July 1994	Mandel	271/290
☐	5342034	August 1994	Mandel et al.	270/58.08
☐	5358238	October 1994	Mandel et al.	271/298
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☐	5450571	September 1995	Rosekrans et al.	395/500
☐	5467432	November 1995	Ota	395/112
☐	5467434	November 1995	Hower, Jr. et al.	395/114
☐	5475801	December 1995	Brindle et al.	395/114

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FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
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57-142058	September 1982	JP	
4 18631	January 1992	JP	
4 317 118	November 1992	JP	
5-108961	April 1993	JP	
2 200 818	August 1988	GB	

OTHER PUBLICATIONS

Tanabe, Masatoshi, "Printer Adopter for LAN as "Third Box" for Connecting Printers", Feb. 1, 1993, Nikkei Communications.
Tsuchiya, Shinichi, "Page Printers for Direct Connections to Net", Oct. 4, 1993, Nikkei Communications.

ART-UNIT: 274

PRIMARY-EXAMINER: Moore; David K.

ASSISTANT-EXAMINER: Garcia; Gabriel I.

ATTY-AGENT-FIRM: Helfgott & Karas, P.C.

ABSTRACT:

A high-speed network printer apparatus which can be used in common by clients having different communication protocols and which can sort out printing jobs into the order of clients. Printing information is supplied from a client which may be a personal computer or a work station through a connector of the printer apparatus. A LAN interface driver receives the printing information and identifies a communication protocol by which the printing information is transferred. A communication protocol controller receives printing information in accordance with a predetermined protocol. A spooling controller, which is coupled to a storage unit which stores the received printing information, creates a queue for printing jobs. A printer controller reads out from the storage unit the printing information corresponding to a printing job of the highest priority which is designated by the queue, and forms a dot image on the basis of the printing information. A printing mechanism prints the image on paper. A mailbox stores printed paper into a designated bin. A printing job table is provided in the printer apparatus, in which each row is allotted to one printing job which includes a field for storing an emulation program name. A registering unit judges whether or not there is a another printing job having the same emulation program name to expedite the printing process.

23 Claims, 71 Drawing figures

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L7: Entry 2 of 4 File: USPT Nov 9, 1999

DOCUMENT-IDENTIFIER: US 5982994 A
TITLE: Network printer apparatus and LAN network system

Application Filing Date (1):
19960708

Detailed Description Text (32):
In the case of single-side printing, the paper is fed to the guide roller 11h and the discharge roller 11i so as to be discharged into the stacker 11j. In the case of double-sided printing, when the rear end of the printed paper reaches the runner 11f, the switchback roller stops the conveying operation. When the paper is stopped, the runner 11f, which rotates counterclockwise, directs the rear end of the paper toward the conveyor passage 11e. The conveyer roller of the conveyor passage 11e feeds the paper to the stand-by roller 11b and turns over it. Thereafter, in the same way with the top side printing, a toner image is transferred onto the back side of the paper fed from the stand-by roller 11b by the transfer and separation portion 10e, and fixed with the heat fixing roller 11d. The printed paper is then conveyed toward the switchback roller 11g, which conveys the paper toward the stacker 11j. The discharge roller 11i discharges the paper into the stacker 11j.

Detailed Description Text (42):
The main functions of the printer controller 22 is reading the printing data of the highest priority from the hard disk 24 by reference to the queue, interpreting the language (e.g., Postscript, PCL (Printer Control Language), etc.) written in the printing data on the basis of a predetermined emulation program, converting the printing data into a dot image for each page (formation of image data), and controlling the engine or printing mechanism.

Detailed Description Text (154):
The printing request controller 31d executes this command and converts the command into

Detailed Description Text (158):
When the printing request controller 31d receives a request for printing from the line command controller 31c, the printing request controller 31d interprets the command, converts the command as occasion demands, and instructs the communication controller 31e to transmit the request for printing. The printing request controller 31d can also receive a request for printing from the menu screen. Specifically, if the menu screen is displayed on the display unit and the necessary items are picked and input as data, the menu controller 31e creates the line commands and operands in correspondence with the data and inputs them to the printing request controller 31d. The printing request controller 31d interprets the line commands. operands, converts the commands and instructs the communication controller 31e to transmit the request for printing.

Detailed Description Text (164):
When all the files are designated and the item "Print" 42e is picked out, the menu controller 31a displays a printing format designating menu 43 (Step 557). If it is not necessary to designate the printing format, the item "Application" 43a is

picked out (Steps 558, 559). Thereafter, the menu controller 31a creates the command/operands (print file, printing attribute file, file attribute information) for a request for printing to the network printer apparatus 20 and inputs them to the printing request controller 31d. The printing request controller 31d converts the command for a request for printing and the printing data, and transmits the converted command and data to the network printer apparatus 20 through the communication controller 31e such as, for example the TCP/IP protocol.

Detailed Description Text (199):
If it is necessary to convert the data or the code, the filter controller 21-11 is started so as to execute the filter control such as the conversion of the printing data and the code (Step 725). Thereafter, the center routine function controller 21-10 is started so as to edit a banner page and write the edited banner page into the printing data (Step 726).

Detailed Description Text (201):
The code conversion is an operation of converting a code into another code or replacing a wrong code by the right code. The data conversion is an operation of converting, for example, the data of an EUC (Extended Universal Code) into the data of another code, for example, the data of a JIS (Japanese Industrial Standards) code. When it is necessary to convert the data or the code, the filter controller 21-11 is called (Step 725a), the data or the code is taken out of the input buffer, the code is checked and converted, or the data is converted (Steps 725b, 725c), and the converted results are stored in the output buffer (Step 725d).

Detailed Description Text (203):
The step controller 21-12 supplies a set of the user ID (user name) and the job number to the center routine function controller 21-10 (Step 726a). The center routine function controller 21-10 secures a buffer for the editing operation (Step 726b), and reads the pattern stored in the hard disk 24 into the buffer so as to fill in the variable portion thereof. For example, the user ID is converted into an ornate initial and the variable portion is filled with the ornate initial and the printing date, thereby ending the edition of the banner page (Step 726c). When the edition of the banner page is finished, the banner page is disposed at the head, the tail, or both at the head and at the tail of the printing data which is supplied from the client (Step 726d), thereby ending the processing of the banner page. In the case of inserting the banner page at the head and at the tail, the corresponding identification codes are attached to the respective banner pages.

Detailed Description Text (346):
(3) a network printer apparatus has an FEP which includes a mechanism of a combination of LAN driver controller, LAN interface driver control, a conversation (inquiry, response) controller between the client and the network printer apparatus, communication control between the FEP and the RIP, and spooling control of printing data;

Detailed Description Text (347):
(4) a network printer apparatus uses a communication system which is a combination of a communication through spool and a communication through a memory bus as the communication system between the FEP and the printer controller;

Detailed Description Text (442):
(51) a network printer apparatus has a function enabling data to be converted, checked or changed as a filter control function; and

CLAIMS:

1. A network printer apparatus connected to a plurality of clients including personal computers or work stations through a LAN network system, the apparatus comprising:

printer means including:

a connector for connecting the apparatus to the LAN network system and provided with a plurality of communications protocols;

a LAN adapter means including a LAN interface driver for receiving printing information from a client through said LAN network system, and a multiprotocol controller for identifying a communication protocol by which said printing information is transferred and controlling communication between the apparatus and the client in accordance with the identified communication protocol;

a storage means for storing printing information transferred from said plurality of clients;

a printer controller, coupled to said storage means, for forming an image on the basis of said printing information; and

a printing mechanism for printing said image on paper; and

a mailbox including a multiplicity of bins for accommodating printed paper so as to store printed paper in a designated bin and means for controlling said mailbox to transfer the printed paper to a selected bin in accordance with bin select information transmitted from said printer means;

wherein said printer means further including:

mailbox control means having a corresponding table storing a relationship between the clients and the bin; and

wherein said printer controller further including:

means for determining said bin select information identifying the one of the bins for storing the printed paper based upon the corresponding table in accordance with a client information in the printing information which identifies the client computers requesting the printing job for the printed paper; and

means for transmitting said bin select information determined by said determining means to said controlling means of said mail box.

4. A network printer apparatus according to claim 2, wherein said displaying means is one or a combination of elements selected from the group consisting of a liquid crystal panel, a lamp and a handwritten nameplate.

7. A network printer apparatus connected to a plurality of clients through a LAN network system and comprising:

printer means including:

a LAN interface driver for receiving printing information from said client through said LAN;

a communication protocol controller for controlling communication in accordance with a communication protocol;

storage means for storing said printing information;

a spooling controller coupled to said storage means for storing said printing information, and creating a queue for printing jobs;

a printer controller for reading out from said storage means a printing information corresponding to a printing job of the highest priority which is designated by said queue and forming an image on the basis of said printing information;

a printing mechanism for printing said image on paper; and

a mailbox including a multiplicity of bins for accommodating printed paper so as to store printed paper in a designated bin and means for controlling said mailbox to transfer the printed paper to a selected bin in accordance with bin select information transmitted from said printer means;

wherein said printer means further including:

mailbox control means having a corresponding table storing a relationship between the clients and the bins; and

wherein said printer controller further including: means for determining said bin select information identifying the one of the bins for storing the printed paper based upon the corresponding table in accordance with a client information in the printing information which identifies the client computers requesting the printing job for the printed paper; and

means for transmitting said bin select information determined by said determining means to said controlling means of said mail box.

8. A network printer apparatus according to claim 7, further comprising a mailbox management information file for storing names of clients, or names of groups of clients, number of sheets accommodated, name and number of printing jobs, production of overflow for each bin.

11. A network printer apparatus according to claim 9, wherein said displaying means is one or a combination of elements selected from the group consisting of a liquid crystal panel, a lamp and a handwritten nameplate.

17. A LAN network system comprising:

a plurality of clients including personal computers or work stations; and

a network printer apparatus connected to said personal computers or work stations;

said network printer apparatus including:

a communication protocol control means for controlling communication between said apparatus and a client in accordance with a communication protocol;

storage means for storing printing information;

a spooling controller coupled to said storage means for storing printing information and creating a queue for printing jobs;

a printer controller for reading out from said storage means the printing information corresponding to a printing job of the highest priority which is designated by said queue and forming an image on the basis of said printing information;

a printing mechanism for printing said image on paper; and

a mailbox including a multiplicity of bins for accommodating printed paper so as to store said printed paper in a designated bin and means for controlling said mailbox to transfer the printer to a selected bin in accordance with bin select information

transmitted from said printer apparatus; and

wherein said printer apparatus further including:

a mailbox control means having a corresponding table storing a relationship between the clients and the bins; and

wherein said printer controller further including:

means for determining said bin select information identifying the one of the bins for storing the printed paper based upon the corresponding table in accordance with a client information in the printing information which identifies the client computers requesting the printing job for the printed paper;

means for transmitting said bin select information determined by said determining means to said controlling means of said mailbox; and

each of said clients including:

a menu controller for creating printing data, inquiry data for inquiring about the state of said apparatus and printing job information and data for changing or registering printing attributes by an operation on a menu screen; and

a storage designation controller for designating storage into said mailbox; and

a communication controller for transmitting a request from said client to said network printer apparatus and receiving information from said network printer apparatus.

20. A network printer apparatus according to claim 1, wherein each of the clients include a mailbox manager for remotely controlling the mailbox and remotely updating the table of the mailbox control means.

21. A network printer apparatus according to claim 7, wherein each of the clients include a mailbox manager for remotely controlling the mailbox and remotely updating the table of the mailbox control means.

22. A network printer apparatus according to claim 17, wherein each of the clients further include a mailbox manager for remotely controlling the mailbox and remotely updating the table of the mailbox control means.

23. A network printer apparatus connected to a plurality of clients through a LAN network system and comprising:

a printing mechanism for printing an image on paper;

a mailbox including a multiplicity of bins for accommodating printed paper so as to store printed paper in a designated bin and means for controlling said mailbox to transfer the printed paper to a selected bin; and

said network printer apparatus including:

a LAN interface driver for receiving printing information from said client through said LAN;

a communication protocol controller for controlling communication in accordance with a communication protocol;

a printer controller for reading out from said storage means a printing information corresponding to a printing job of the highest priority and forming an image on the

basis of said printing information; and

mailbox control means and a table storing a relationship between the clients and the bins;

wherein each of the clients include a mailbox manager for remotely controlling the mailbox and remotely updating the table of mailbox control means.

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L7: Entry 1 of 4 File: USPT Jun 24, 2003

US-PAT-NO: 6583852
DOCUMENT-IDENTIFIER: US 6583852 B2

TITLE: Apparatus, architecture and method for high-speed printing

DATE-ISSUED: June 24, 2003

INVENTOR-INFORMATION:

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APPL-NO: 09/ 871022 [PALM]
DATE FILED: May 31, 2001

PARENT-CASE:
CROSS-REFERENCES TO RELATED INVENTIONS This application claims priority from U.S. Provisional Application Ser. No. 60/234,461, filed on Sep. 21. 2000.

INT-CL: [07] G03 B 27/52

US-CL-ISSUED: 355/40; 396/599
US-CL-CURRENT: 355/40; 396/599

FIELD-OF-SEARCH: 355/355, 355/38, 355/40, 355/41, 355/27-29, 396/599, 396/617, 396/620, 396/626, 156/249

PRIOR-ART-DISCLOSED:

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FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
4-314047	November 1992	JP	

ART-UNIT: 2851

PRIMARY-EXAMINER: Rutledge; D.

ATTY-AGENT-FIRM: Tran & Associates

ABSTRACT:

A high-speed digital photographic printing system and method includes image-specific backprinting and automatic tracking and sorting of printed jobs. The system includes one or more photographic printers, where each printer can have a different printing rate. A scheduler schedules printing orders to the different printers. The printer-independent image rendering is conducted asynchronous to the printing to maximize the printing throughput. In some embodiments, the rendering image processor does the vast majority of the image processing and outputs a printer-independent data file (generally much larger than the source image data file) that requires little if any further data manipulations or processing in the exposure unit. A photographic printing method and system for producing prints in response to input digital images includes a high-speed exposure unit that exposes a photosensitive material coated on a substrate in response to the input digital image, a chemical processor unit that receives and processes the exposed photosensitive material to form visible dye images on the substrate, a backprinting unit that receives the substrate having the visible dye images and prints information on the opposite surface of the substrate to the dye image, and a cutting unit that produces separate sheets of printed images after the backprinting unit prints information.

61 Claims, 6 Drawing figures

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L7: Entry 1 of 4 File: USPT Jun 24, 2003

DOCUMENT-IDENTIFIER: US 6583852 B2
TITLE: Apparatus, architecture and method for high-speed printing

Application Filing Date (1):
20010531

Brief Summary Text (6):
The digital image data are converted into a light pattern that is imaged onto a photographic paper that is processed using a conventional chemical process for color prints. Typically, the photographic paper, in the form of a long roll or a cut sheet, is exposed to form a series of latent images, then passed through the chemical processor in a continuous fashion. The roll paper is cut into individual prints. Conventionally, a stack of such photographic prints would be placed back into an envelope used to submit the film for processing. However, in the case of digital images that can be submitted across the internet, there is no such envelope, so one must be generated and addressed to the customer or recipient for the photos.

Brief Summary Text (8):
The process for generating photographic prints includes a number of different subprocesses, such as preprocessing the image data, converting the image data into an image exposure pattern to expose a photosensitive material coated on a substrate to form a latent image, processing the photosensitive material to form a dye image, optionally printing on the back of each print, cutting and stacking the prints, and packaging and shipping the prints. Any of these processes can become a bottleneck that limits the overall speed of the system.

Detailed Description Text (18):
FIG. 5 shows a block diagram of a printer portion 500 of high-speed printing system 100, showing more details of one embodiment. Although one of each unit is shown, it is to be understood that in some embodiments, a system 100 can include one or more of each unit (120, 140, 150, 160) shown here, or can combine units, or omit one or more of these units. In the embodiment shown, high-speed exposure unit 120 exposes the photographic paper, processing unit 140 (in some embodiments, each processing unit 140 is a chemical processing unit for color photographic print paper) develops the images, backprinting unit 150 prints information on the back (reverse side) of some or all of the prints coordinated with the image on the front (obverse side), and cutting and packaging unit 160 cuts the batch roll into individual prints and sorts, stacks, collates, and/or wraps the prints.

Detailed Description Text (50):
In some embodiments, high-speed photographic printing system 100 (see FIG. 1) includes at least one high-speed printer 500 that includes a high-speed exposure unit 120, a chemical processor 140, a backprinting unit 150, and a cutting/packaging unit 160. In some embodiments, backprinting unit 150 and cutting/packaging unit 160 are combined into a single unit.

Detailed Description Text (73):
In accordance to the present invention, the high-speed printing system 100 can produce photographic images on an enhanced photographic paper having four-color

emulsion layers (yellow, magenta, cyan, plus black). As in the conventional photographic printing process, the yellow, magenta, and the cyan emulsion layers are respectively sensitized to blue, green and red photons. Yellow, magenta, and cyan dye images are formed as a result of blue, green and red image-wise exposures. In accordance to the present invention, an additional black layer is provided forming black dye image. To avoid cross-spectral sensitization, the black emulsion layer is spectral sensitized to outside of the visible spectrum (of red, green, blue photons). Preferably, infrared spectral sensitization dyes are adsorbed on the silver halide emulsion grains to provide the spectral sensitization. An infrared IR LED print head can be used to fulfill such exposure. The formation of the black dyes can be achieved by black forming dye molecules, or by a balanced mixture of yellow, magenta, and cyan color-formation dyes. The image rendering unit 113 preprocess the input digital image and convert the input colors into four color planes corresponding to the exposure levels for each of the blue, green, red, and infrared exposures that in turn form yellow, magenta, cyan and black dye images on the enhanced photographic paper. For example, an input digital image can be provided in a RGB color space. The RGB colors are mapped into the YMCK color space. Typically, the black color is formed at image areas where there are high neutral densities. The onset of the color densities where the black color appears can be adjusted using an Under-Color Removal (UCR) algorithm that is known in the art. For each particular 4-color enhanced photographic paper and 4-color photographic printer, the UCR is used to optimize the benefit of increase in color gamut and the cost of increase grain noise by the black colors.

Detailed Description Text (82):
Thus, some embodiments of the present invention provide separate units for one or more of the printing processes of rendering, exposing, developing, backprinting, cutting, stacking, consolidating, and wrapping. These separate units 120, 140, 150, and/or 160 are controlled and coordinated by a scheduler computer 115 that tracks the print images of individual customer orders or portions thereof, through all of the units. Since each separate unit can now run at its own maximum speed, various numbers of replications of individual units are provided in some embodiments. For example, two exposure units 120 (even two units running at different speeds) can expose photopaper, one processor unit 140 can develop all the exposed paper, four cutting units 160 might be needed to cut and stack the prints, and the scheduler computer 115 is used to track each customer order. If needed, the scheduler computer helps consolidate different portions of a single customer order that was split for processing, and now needs to be gathered into a single package for mailing.

Detailed Description Text (86):
By allocating groups of customer orders into batch rolls 200, these individual portions can be readily handled and loaded into each subsequent function. If repairs or other interruptions are needed for one unit (120, 140, 150, or 160), the other units can continue and batch rolls 200 can be queued until that interrupted unit is brought back on-line, or rescheduled for other like units that can substitute for the unit offline. This also allows ready handling of a mix of high-speed and low-speed units, such as combining a small-format fast printer with large-format slower printer.

CLAIMS:

22. The method of claim 18, further comprising: e) exposing at least one digital image and a mailing address of a customer onto an index print.

61. The enhanced photographic printing system of claim 58 further comprising an image rendering unit that converts the color code values in the input digital images to four-color values corresponding to the exposure values of the four light sources in the exposure unit.

L7: Entry 3 of 4 File: USPT Jun 23, 1998

US-PAT-NO: 5769457
DOCUMENT-IDENTIFIER: US 5769457 A

TITLE: Printed sheet mailers and methods of making

DATE-ISSUED: June 23, 1998

INVENTOR-INFORMATION:

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APPL-NO: 08/ 482634 [PALM]
DATE FILED: June 7, 1995

PARENT-CASE:
This application is a continuation-in-part of U.S. patent application Ser. No. 08/191,975, filed Feb. 4, 1994, now U.S. Pat. No. 5,495,981, which is a continuation-in-part of U.S. patent application Ser. No. 07/628,236, filed Dec. 1, 1990, now abandoned.

INT-CL: [06] B42 D 15/00

US-CL-ISSUED: 283/61; 283/82, 283/83, 283/62, 283/116
US-CL-CURRENT: 283/61; 283/116, 283/62, 283/82, 283/83

3,722 cards

FIELD-OF-SEARCH: 283/82, 283/83, 283/61, 283/62, 283/116

PRIOR-ART-DISCLOSED:

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ART-UNIT: 329

PRIMARY-EXAMINER: Howell; Daniel W.

ASSISTANT-EXAMINER: Bmargava; Adesh

ATTY-AGENT-FIRM: Panitch Schwarz Jacobs & Nadel, P.C.

ABSTRACT:

A printed sheet product comprises a thin core having a pair of opposing major planar sides. A plurality of sets of variable data fields are printed on at least a first side of the core. One or more of the variable data fields of each set may be printed on the opposing second side of the core. Each set of printed variable data fields includes at least a first data field printed with a numeric code, the numeric code of each variable data field set being different from that of each other set printed on the first side of the core. Each set of variable data fields further includes a second data field printed with either a name and mailing address uniquely associated with a numeric code or with another representation of the numeric code. Where printed, the name and address of each variable data set differs from that of each other variable data set printed on the first side of the core. The sheet product is scored to at least define one removable element containing the first variable data field from each set printed on the sheet product. Where name and address data fields are printed, the sheet product may further be scored to separate the sheet product into individual sheet sections which can be inserted without folding into envelopes for direct mailing of the removable first element to an appropriate recipient.

27 Claims, 20 Drawing figures

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L7: Entry 3 of 4 File: USPT Jun 23, 1998

DOCUMENT-IDENTIFIER: US 5769457 A
TITLE: Printed sheet mailers and methods of making

Application Filing Date (1):
19950607

Detailed Description Text (14):
In converting this intermediate product 100 into the sheet product 110 of FIGS. 4-6, the first and second longitudinal edge portions 67 and 68 of the core 12, bearing the adhesive stripes 60 and 64, respectively, of the sheet product 100 are turned, as is indicated diagrammatically in FIG. 7, onto an adjoining portion of the core 12 and sheet product 100 forming a double thickness of the core 12 along the longitudinal edges of the resulting sheet product 110 part of which is indicated in FIG. 6. The sheet product 110 formed in this manner is thereafter scored, the scoring again being indicated by the unnumbered, bold dotted lines in FIGS. 4 and 5. The scoring defines plural sets of plural elements removable from the sheet product 110 and removably adhered to one another by the intervening adhesive stripe 60 or 64. In the depicted embodiment 110 continuous cuts have been made along the longer, folded side edges of the intermediate product 100 to define the outer side portions of the removable elements

Detailed Description Text (31):
The programmable code field printer selected preferably is configured to print each of the variable data fields. With respect to sheet products 10, 100/100 the first plurality of code fields 20a-27a are printed in a first direction and the second plurality of code fields 20b-27b in a direction transverse to the first direction of the first code field of the set on the one side of the sheet or web constituting the first side 14 of the core 12. As is indicated in FIGS. 1, 2 and 4, 5, the bars and numerals of the first plurality of code fields 20a-27a are printed in a portrait mode running horizontally across the sheet 10, while the second plurality of code fields 20b-27b are printed in a landscape mode running vertically along the side edges of the sheet 10. This is accomplished in straightforward fashion by simply programming the computer to identify the characters to be printed at predetermined locations on the web in defined angular orientations to the web. In this way, all of the code fields are printed on the web in a single pass of the web through the printer. Preferably, the first and second coverings 54 and 56 are then applied to the opposing sides 14 and 16 of the web in a conventional manner for the covering material selected. The stripes of pressure sensitive adhesive 60 and 64 are also applied, with or without release paper 62 and 66, respectively, for the embodiment 10, 100 or 110 selected.

CLAIMS:

1. A printed sheet product comprising: a core and a separate strip, the core being planar and having opposing major sides and being printed on one major side in a variable data field with a name and mailing address of a particular person assigned a unique code, the separate strip being permanently secured partially covering one major side of the core while extending completely along the one major side of the core, the separate strip being spaced on the core laterally away from the printed variable data field, the product including an at least generally U-shaped scoring

which scoring cuts at least sufficiently through the product to define a card element removable from a remainder of the product, the removable card element including only a portion of the separate strip, and the printed variable data field being left on the remainder of the sheet product.

2. The sheet product of claim 1 wherein the removable card element has a given material composition and the remainder of the product immediately adjoining the scoring has a material composition identical to the material composition of the removable card element, at least one portion of the sheet product including the removable card element being of a laminate construction with a predetermined plurality of layers including the core and another portion of the sheet product including the printed variable data field with the name and mailing address of the particular person being of fewer layers than the predetermined number of layers.

15. The sheet product of claim 1 in combination with a generally rectangular envelope having a length and a width and a front face with a window, the product having a length and a width sufficient for the product to be received in the envelope without folding and substantially without movement and with the name and mailing address of the printed first data field being aligned with and visible through the window of the envelope.

16. The sheet product of claim 1 further being printed on the one major side with a plurality of variable data fields, each of the variable data fields of the plurality including a name and mailing address of a particular person in an at least human readable form, each variable data field of the plurality being different in content from each other variable data field of the first plurality printed on the core, each printed variable data field being spaced apart from each other variable data field of the plurality along the length of the core such that the core can be severed transversely across its length into sheet sections each bearing a portion of the separate strip and only one of the plurality of printed variable data fields, and each sheet section laterally adjoining one of the variable data fields being encoded with a unique code assigned to the individual identified in the adjoining variable data field.

17. A printed sheet product comprising:

a generally planar core having a pair of opposing major sides, a width and a length greater than the width; and

a separate, flexible strip permanently secured with the core extending entirely along the length of the core on one of the major sides of the core only partially covering the one major side; and

the core being printed with a plurality of variable data fields, each of the variable data fields of the plurality including a name and mailing address of a particular person in an at least human readable form, each variable data field of the plurality being different in content from each other variable data field of the plurality printed on the core, each variable data field being spaced apart from each other variable data field of the plurality along the length of the core such that the core can be severed transversely to its length into a plurality of sheet sections, each sheet section bearing a portion of the secured flexible strip and only one variable data field of the plurality, and each sheet section laterally adjoining one of the variable data fields being encoded with a unique code assigned to the person in the adjoining variable data field.

20. A printed sheet product comprising:

a generally planar core having a pair of opposing major sides, a width and a length greater than the width;

a separate, flexible magnetic strip secured with the core extending entirely along the length of the core on one of the major sides of the core only partially covering the one major side of the core; and

the core being printed with a plurality of variable data fields, each of the variable data fields including a name and mailing address of a particular person in at least human readable form, each line of the printed name and address extending in a direction generally parallel to the width of the core and generally perpendicular to the flexible magnetic strip, each variable data field being spaced apart from each other variable data field of the plurality along the length of the core such that the core can be severed transversely across its length into sheet sections, each sheet section bearing a portion of the affixed flexible magnetic strip and only one of the plurality of variable data fields.

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L7: Entry 4 of 4 File: USPT Mar 17, 1992

US-PAT-NO: 5095682
DOCUMENT-IDENTIFIER: US 5095682 A

TITLE: Mailer and method and apparatus for making

DATE-ISSUED: March 17, 1992

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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ASSIGNEE-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Wallace Computer Services, Inc.	Hillside	IL			02

APPL-NO: 07/ 663690 [PALM]
DATE FILED: March 4, 1991

PARENT-CASE:
This application is a division of my co-pending application Ser. No. 563,404, filed Aug. 6, 1990 now U.S. Pat. No. 5,064,115.

INT-CL: [05] B65B 11/48, B65B 61/02

US-CL-ISSUED: 53/411; 53/117, 53/284.3, 53/429, 493/216
US-CL-CURRENT: 53/411; 493/216, 53/117, 53/284.3, 53/429

FIELD-OF-SEARCH: 53/460, 53/284.3, 53/266.1, 53/429, 53/117, 53/116, 493/216, 493/421, 493/420

PRIOR-ART-DISCLOSED:

U.S. PATENT DOCUMENTS

Search Selected Search ALL Clear

	PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
☐	3457696	July 1969	Berkley	493/216 X
☐	3628304	December 1971	Hornung	493/216 X
☐	4189895	February 1980	Volkert et al.	53/460 X
☐	4411643	October 1983	Higginson	493/216 X

☐	4668212	May 1987	Kotani	493/216
☐	4969594	November 1990	Ashby	53/460 X

ART-UNIT: 321

PRIMARY-EXAMINER: Coan; James F.

ATTY-AGENT-FIRM: Tilton, Fallon, Lungmus & Chestnut

ABSTRACT:

A mailer product and apparatus and method in which a first sheet is printed by a computer printer and then augmented by a second sheet prior to entering folding means, one of the sheets being twice transversely folded.

11 Claims, 31 Drawing figures

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L7: Entry 4 of 4 File: USPT Mar 17, 1992

DOCUMENT-IDENTIFIER: US 5095682 A
TITLE: Mailer and method and apparatus for making

Application Filing Date (1):
19910304

Brief Summary Text (4):
The mailer made possible by the invention is advantageous in combining a computer printed form with one or more additional sheets such as a return envelope, insert, label, coupon or an outer envelope.

Brief Summary Text (12):
There are many large and important business and promotional systems that can be met satisfactorily with a mailer using a single ply of computer printer, for instance, the issuing of checks for savings, mutual funds, and corporate dividend payments. Often these checks do not require more information to accompany them than can be provided in a single ply mailer. These requirements can be met by the mailers of my inventions U.S. Pat. Nos. 4,754,915 and 4,889,278. But it is also a common need even in relatively simple business systems to include additional sheets of information when some unexpected notice is required. In these cases, it is inconvenient, expensive, and even impractical due to time limitations to go back to the forms printer for a run of special forms.

Detailed Description Text (13):
FIGS. 9-11 show a folding sequence for the form of FIG. 12 using the more commonly available folder 41' with two upwardly extending folding chutes 71, 71a and two downwardly extending chutes 72, 72a. It is well known in practice to use the various combinations of folding chutes extending up and down to achieve desired folds using the many combinations possible.

Detailed Description Text (18):
Although the form 47 can be a continuous series fed into the computer printer as a continuous form from a zig-zag folded pack or from a roll, it can also be fed into the printer as an individual sheet. It is well known in the art to convert a continuous form into a sheet by trimming off the control punch margins and bursting the continuous form across the web perforations or cutting the continuous web into discrete lengths using machines such as the German-made Bowe Cutter well known in the art.

CLAIMS:

1. In a method of mailer production, the steps of computer printing a ply and combining the printed ply with another ply in superposed offset relation, feeding said superposed plies into a first roll nip, advancing a first of said superposed plies into a buckle folder chute to develop a fold portion in only said first ply, directing said fold portion and the second of said superposed plies into a second roll nip to provide a first fold in only said first ply, and advancing said plies into additional buckle folder chute and roll nip means to develop two folds in said

second ply and a second fold in said first ply and with the folded first ply positioned between the two folds of said second ply.

5. A method of mailer production comprising sequentially computer printing a series of single sheets, sequentially combining a series of additional sheets with said series of single sheets in leading edge offset relation in the nip of folding means, transversely folding each sheet of one series while confining a sheet from the other series therein, and closing the edges of each folded sheet to provide the outgoing envelope of a mailer, each of additional sheets being secured to its associated single sheet.

6. A method of mailer production comprising sequentially computer printing a series of single sheets, sequentially combining a series of additional sheets with said series of single sheets in leading edge offset relation in the nip of folding means, transversely folding each sheet of one series while confining a sheet from the other series therein, and closing the edges of each folded sheet to provide the outgoing envelope of a mailer, said sheets being secured by glue.

7. A method of mailer production comprising sequentially computer printing a series of single sheets, sequentially combining a series of additional sheets with said series of single sheets in leading edge offset relation in the nip of folding means, transversely folding each sheet of one series while confining a sheet from the other series therein, and closing the edges of each folded sheet to provide the outgoing envelope of a mailer, said sheets being secured by crimping.

9. A method of mailer production comprising sequentially computer printing a series of single sheets, sequentially combining a series of additional sheets with said series of single sheets in leading edge offset relation in the nip of folding means, transversely folding each sheet of one series while confining a sheet from the other series therein, and closing the edges of each folded sheet to provide the outgoing envelope of a mailer, said additional sheets are added to said single sheets prior to computer printing of said single sheets.

10. A method of mailer production comprising sequentially computer printing a series of single sheets, sequentially combining a series of additional sheets with said series of single sheets in leading edge offset relation in the nip of folding means, transversely folding each sheet of one series while confining a sheet from the other series therein, and closing the edges of each folded sheet to provide the outgoing envelope of a mailer, said sheets being secured by stapling.

11. A method of mailer production comprising sequentially computer printing a series of single sheets, sequentially combining a series of additional sheets with said series of single sheets in leading edge offset relation in the nip of folding means, transversely folding each sheet of one series while confining a sheet from the other series therein, and closing the edges of each folded sheet to provide the outgoing envelope of a mailer, said sheets being secured by static electricity.

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L11: Entry 1 of 5 File: USPT Mar 18, 2003

DOCUMENT-IDENTIFIER: US 6533324 B2
TITLE: Advertising brochure and method for its use

Application Filing Date (1):
20010306

Brief Summary Text (4):
Advertising and promotional inserts are well known for magazines and other types of periodicals. These inserts can be as simple as a postcard insert that is placed between two pages of a magazine, and is not attached to the magazine. However, these postcard inserts routinely fall out from between the magazine pages, when the magazine is opened. Another type of insert is an attached postcard that is secured to the magazine by, for example, the center staples used to bind the pages of the magazine. A multi-ply advertising insert for a magazine where the insert forms a pocket for a return brochure is described in U.S. Pat. No. 5,269,563. A third type of promotion included with magazines are product inserts, such as sample products of toothpaste, computer software CDROMS and other small samples, that are included within the pages of the magazine or enclosed within the plastic wrapper for the magazine.

Detailed Description Text (7):
Variable text, photographs and graphics (collectively variable print data) are those that do vary from one printed brochure to the next, in a single print run. Because variable print data changes, a brochure template blocks out an area of the brochure to receive the variable printing, and may include a computer file name or database field that identifies the location in computer memory from which variable data is obtained during the print process, in step 610.

Detailed Description Text (15):
The second and third sheet inserts 150, 152, respectively, are similar and are shown in FIG. 2. In the example shown here, the second and third sheet inserts are detachable coupons 154. The coupons may be for discount purchases, rebates, two-for-one sales and any other promotion that is desired by the business. In addition to coupons or as an alternative to coupons, the inserts may be return postcard to be filled in with information by the addressee, or may contain further text and/or graphics. The coupons 154 shown here may be used to obtain discounts on products and services that are healthy for the addressee. The coupons may be printed with variable information such as the name 156 of the addressee of the brochure.

CLAIMS:

1. An assembly adapted for mailing, comprising: a periodical having, front and rear covers; a promotional insert comprising a plurality-of plys, said promotional insert being disposed adjacent to, to overlie at least a portion of, one of said front and rear covers of said periodical; a wrapping for enclosing said periodical and said promotional insert; and one of said plys of said promotional insert including a variable data print area for receiving addressee indicia and a print area for postage indicia, said wrapping being transparent at least in part so as to expose said postal indicia and said address indicia through the wrapping, wherein said promotional insert is free from direct mechanical attachment to said

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periodical so as to be substantially free-floating within said wrapping.

8. An assembly adapted for mailing, comprising: a periodical having front and rear covers; a wrapping enclosing said periodical; a promotional insert comprising a plurality of plys, said promotional insert being disposed in said wrapping and adjacent to one of said front and rear covers of said periodical wherein said brochure is free from mechanical attachment to said periodical so as to be substantially free floating within said wrapping; and one of said plys of said promotional insert including a variable data print area for receiving addressee indicia and a print area for postage indicia, said promotional insert being in a side-by-side relation to said periodical so as to expose said postal indicia and said address indicia through said wrapping.

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L2: Entry 3 of 4 File: USPT Mar 9, 1999

DOCUMENT-IDENTIFIER: US 5881233 A
TITLE: Facsimile mail apparatus

Brief Summary Text (6):
U.S. Pat. No. 5,479,411 discloses that voice, facsimile, and electronic mail messaging is integrated in a system which converts e-mail messages into voice-and-fax messages. An e-mail message is parsed into voiceable, prose, segments and non-voiceable, non-prose, segments. Prose segments are converted into voice message segments via text-to-speech facilities. Each non-prose segment is converted into a fax segment. Voice pointers to fax segments are inserted into the voice message, in places corresponding to the non-prose segments in the e-mail message. The voice file and fax file are then stored for subsequent delivery of the message as an integrated voice-and-fax message. Conversion of integrated voice-and-fax messages into e-mail messages is likewise envisioned.

Brief Summary Text (14):
A sixth aspect of this invention is based on the first aspect thereof, and provides an electronic mail system further comprising means for receiving audio data, means for integrating the audio data and the image data into integration-resultant data, and means for transmitting the integration-resultant data as a single electronic mail.

Brief Summary Text (15):
A seventh aspect of this invention is based on the first aspect thereof, and provides an electronic mail system further comprising means for receiving moving-picture data, means for integrating the moving-picture data and the image data into integration-resultant data, and means for transmitting the integration-resultant data as a single electronic mail.

Detailed Description Text (9):
Then, the step S3 activates the data compressor 8 so that the binary image data is compressed by the device 8 into compression-resultant image data of a given facsimile format. Further, the step S3 transfers the compression-resultant image data of the facsimile format from the data compressor 8 to the storage unit 4 before storing the compression-resultant image data of the facsimile format into the storage unit 4. In the case where the transmission of information on a plurality of document sheets (that is, a plurality of pages) is required, the document sheets are sequentially scanned by the device 6 and the compression-resultant image data of the facsimile format is stored into the storage unit 4 as a single file having a plurality of pages.

Detailed Description Text (57):
A step S56 following the step S55 transfers the compression-resultant image data of the facsimile format from the storage unit 4 to the format converter 5. In addition, the step S56 transfers the information of the destination to the format converter 5. Further, the step S56 transmits the compression-resultant audio data from the storage unit 4 to the format converter 5. The step S56 activates the format converter 5 so that the compression-resultant image data of the facsimile format and the compression-resultant audio data are converted and integrated by the device 5 into corresponding image/audio data of the e-mail format. It should be

noted that the manner of the integration is in conformity with the MIME standards. The image/audio data of the e-mail format contains the information of the destination. Further, the step S56 transfers the image/audio data of the e-mail format from the format converter 5 to the storage unit 4 before storing the image/audio data of the e-mail format into the storage unit 4.

Detailed Description Text (73):
A step S66 following the step S65 transfers the compression-resultant image data of the facsimile format from the storage unit 4 to the format converter 5. In addition, the step S66 transfers the information of the destination to the format converter 5. Further, the step S66 transmits the compression-resultant moving-picture data from the storage unit 4 to the format converter 5. The step S66 activates the format converter 5 so that the compression-resultant image data of the facsimile format and the compression-resultant moving-picture data are converted and integrated by the device 5 into corresponding image data of the e-mail format. It should be noted that the manner of the integration is in conformity with the MIME standards. The image data of the e-mail format contains the information of the destination. Further, the step S66 transfers the image data of the e-mail format from the format converter 5 to the storage unit 4 before storing the image data of the e-mail format into the storage unit 4.

Detailed Description Text (124):
The step S97 activates the scanner 6 so that an image of the surface of a document sheet in the scanner 6 is converted by the scanner 6 into corresponding binary image data (corresponding bi-level image data). A step S98A following the step S97 transfers the binary image data from the scanner 6 to the data compressor/expander 8A. Then, the step S98A activates the data compressor/expander 8A so that the binary image data is compressed by the device 8 into compression-resultant image data of a given facsimile format. Further, the step S98A transfers the compression-resultant image data of the facsimile format from the data compressor/expander 8A to the storage unit 4 before storing the compression-resultant image data of the facsimile format into the storage unit 4. In the case where the transmission of information on a plurality of document sheets (that is, a plurality of pages) is required, the document sheets are sequentially scanned by the device 6 and the compression-resultant image data of the facsimile format is stored into the storage unit 4 as a single file having a plurality of pages.

Detailed Description Text (164):
In the seventeenth embodiment, the step S135B is modified so that information of a cover sheet is read out from the storage unit 4, and the information of the cover sheet is added to expansion-resultant binary image data. Accordingly, a combination of the cover-sheet information and the expansion-resultant binary image data is visualized or printed out by a printer 11 (see FIG. 24).

Detailed Description Text (176):
A step S153A following the step S152 adds reception ID information to the image data of the facsimile format. The reception ID information is generated on the basis of date and time unique for one year. The step S153A transfers the ID-added image data of the facsimile format to the storage unit 4 before storing the ID-added image data of the facsimile format into the storage unit 4.

Detailed Description Text (188):
Any one of the second embodiment to the twentieth embodiment may be modified to indicate character code data in the received e-mail on a display such as a CRT. The CRT may also be used to indicate moving pictures.

Detailed Description Text (189):
At least two of the first embodiment to the twentieth embodiment may be combined into an electronic mail system.

CLAIMS:

1. A facsimile which automatically receives facsimile data transmitted from a sender and sends image data of a paper document to an addressed destination, comprising:

an operation panel having a start-key to start a transmitting operation and an inputting key to input an electronic mail destination address;

a scanner for scanning a paper document and converting the paper document into image data;

compression means for compressing the scanned image data;

a facsimile transmitting and receiving unit which negotiates with a sender or destination facsimile before receiving or transmitting image data, for transmitting the compressed image data in a facsimile format to the destination facsimile via the telephone network and receiving a compressed image data in the facsimile format from the sender via the telephone network;

a first data converting means for converting the compressed image data into an electronic-mail format;

electronic-mail transmitting means for transmitting the compressed image data converted into the electronic-mail format to a destination address inputted from said inputting key on a network in which transmitting and receiving of an electronic-mail is possible;

electronic mail receiving means for receiving the image data converted into the electronic mail format from a sender via a communication network;

a second data converting means for converting the image data into facsimile format;

expansion means for expanding compressed image data which includes the image data received by said facsimile transmitting and receiving unit and a compressed image data converted by said second data converting means; and

a printer for printing the image data expanded by said expansion means;

wherein said operation panel, said scanner, said compression means, facsimile transmitting and receiving unit, said first data converting means, said electronic mail transmitting means, said electronic mail receiving means, said second data converting means, said expansion means and said printer are integrated into said facsimile machine, and

said scanner, said compression means, said first data converting means and said electronic mail transmitting means are sequentially operated in the order for transmit the image data in electronic mail format when said start-key is pushed after setting the paper document on said scanner and the finishing the input of the destination address of an electronic mail.

23. The facsimile mail apparatus of claim 1, further comprising:

means for inputting and outputting audio data;

means for integrating audio data and image data into integration-resultant data and means for transmitting and receiving the integration resultant data as a single electronic-mail.

24. The facsimile mail apparatus of claim 1, further comprising:

means for inputting moving-picture data;

means for integrating moving-picture data and image data into integration-resultant data; and

means for transmitting the integration-resultant data as a single electronic-mail.

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L2: Entry 4 of 4 File: USPT Nov 20, 1990

DOCUMENT-IDENTIFIER: US 4971513 A
TITLE: Method of making up batches of small items

Abstract Text (1):
The installation comprises a delivery conveyor (4) for delivering unit items in buckets (5). A station (3) injects unit items onto the delivery conveyor. A sorting conveyor (6) carries packs (8) corresponding to respective batches to be made up. The sorting conveyor is disposed relative to said delivery conveyor so as to establish at least one item transfer zone therebetween. A central control unit (10) ensure that desired coincidences occur between item-containing buckets (5) and packs (8) for receiving the items, with the control units controlling the transfer of items from the buckets to the packs. The invention is particularly applicable to making up batches of items in response to orders therefor.

Brief Summary Text (3):
The invention is advantageously applicable to dispensing medicines, in particular in hospitals, in order to make up batches of medicines with the batches corresponding to individual patients, and with the batches of medicines for all of the patients in a single service being made up together in response to a set of prescriptions. The invention is naturally also applicable to dispensing other small articles, in shops, warehouses, workshops, etc., for example pieces of hardware or electronic components, with the articles being made up into individual batches in response to a set of orders made out by a set of customers or by a given production service.

Brief Summary Text (6):
Thus, for example, U.S. Pat. No. 3 819 088 describes a device for storing and dispensing objects, with the device comprising a plurality of vertical drawers each constituted by a row of vertical compartments. Each compartment contains a stack of identical objects in the form of boxes or the like. The drawers belong to one or more storage modules. They are individually movable within the corresponding module in translation in a direction perpendicular to the compartments, thereby enabling any one of the compartments in a drawer driven in translation to be positioned over a transporter belt corresponding to the module. Through a suitable compartment bottom, a cleat driven by the belt engages the desired object which is at the bottom of the stack contained in the compartment, thereby extracting the object. The object drops onto the transport belt and is thus driven by this belt or by other belts to a central recovery point, while the drawer is returned to its initial position in its module.

Brief Summary Text (7):
Such prior art systems relate essentially to organizing the storage bay and to the means for automatically extracting each desired object. They process received orders one after the other.

Brief Summary Text (10):
The present invention provides a method of making up batches of small items in individual packs in response to a set of orders specifying the different varieties

of item required in each batch together with the corresponding quantities thereof, said batches being made up by controlling the transfer of items from a closed delivery path for delivering unit items taken from a stock to at least one closed sorting path orthogonal to the delivery path for making up said batches, said paths having at least one transfer zone therebetween, and the method comprising the following steps:

Brief Summary Text (11):
memorizing the set of orders and combining the orders in the set to establish a list of all of the different varieties of item ordered together with the quantity of each variety required to make up all of the batches specified in the set of orders;

Brief Summary Text (12):
placing packs on the, or each, of said sorting paths for displacement therealong, with each pack being associated with a corresponding one of the ordered batches of items;

Brief Summary Text (13):
taking each of the varieties of item in said list in succession and injecting the required quantity of items one-by-one onto said delivery path; and

Brief Summary Text (18):
at least one second or "sorting" conveyor mounted transversely to the delivery conveyor and defining said transfer zones therebetween;

Brief Summary Text (22):
the installation including the improvement whereby the delivery conveyor is a bucket conveyor including fixed first means for holding said conveyor buckets horizontal throughout the path of said delivery conveyor except in the transfer zone(s), and including in said transfer zone(s) both moving second means for holding the buckets horizontal and moving third means for tipping the buckets, said moving second and third means being mounted in a reciprocating configuration whereby whenever one of them is retracted the other one of them is engaged, said reciprocating configuration being controlled by a control member, itself under the control of said central control unit.

Brief Summary Text (25):
The injection station may be is in the form of a desk fitted with a drawer which is movable in translation over slides between a first, item-receiving position and a second, injection position for injecting a received item into that one of the buckets on the delivery conveyor which is adjacent said injection position of the drawer.

Brief Summary Text (26):
In one embodiment, the drawer is driven from its itemreceiving position to its position for injecting the received item into the bucket arriving at the injection station by directly engaging the bucket which is to receive the item, and is disengaged from the bucket at the end of its stroke into its injection position. thereby releasing it for resilient return to its item-receiving position.

Drawing Description Text (10):
FIGS. 11 and 12 are an elevation view and a plan view of one of the buckets mounted on a delivery conveyor in the installation shown in FIG. 1 or 8;

Drawing Description Text (17):
FIG. 21 is a diagrammatic section view through one of the transfer members between the delivery conveyor and the sorting conveyor, as used in an installation as shown in FIG. 1 or 8;

Detailed Description Text (6):
a medicine storage bay shown diagrammatically at 1 in the form of a single storage module having superposed drawers 2, it being understood that the bay as a whole may include a plurality of similar modules, each having several rows of superposed drawers;

Detailed Description Text (8):
a first closed loop sorting conveyor 4 carrying a plurality of buckets 5, said first conveyor being referred to as a "delivery" conveyor and passing close to the injection station 3 in order to receive unit medicines in its buckets, at one medicine per bucket; and

Detailed Description Text (9):
a second endless conveyor 6, referred to as a "sorting" conveyor and being of the type comprising two parallel endless strands carrying a plurality of trays 7 each capable of receiving one or more containers or packs 8, with at least some of the packs being intended to receive respective batches of medicines as they are made up, and serving to store the batches, said packs being referred to as patient packs.

Detailed Description Text (14):
In such an installation, a storage bay 1 will be used, in practice, to store from 150 to 600 varieties of medicine, in at least as many drawers 2 with each drawer corresponding to a single variety of medicine. Display lamps 11 disposed on one of the risers of each column of drawers and level with respective ones of the drawers serve to mark individual drawers in the storage bay. A storage bay comprising drawers of this type is common practice in existing storage equipment.

Detailed Description Text (15):
This storage bay 1 is organized for manual extraction of the medicines from the drawers. The storage bay could be organized differently so as to allow the medicines to be extracted automatically. For example, if automatic extraction is required, the medicines may be packaged in the form of continuous strips or in boxes, and the storage bay may comprise vertical compartments fitted with appropriate tools at the bottoms thereof for cutting a medicine from a strip of medicines or for extracting a single box, in conventional manner for automatic dispensing machinery. The automatically-extracted medicines are then moved to the injection zone of the installation by any appropriate means. In such an automatic installation there would be a fixed injection zone corresponding to the moving desk of the manual installation desrcibed herein.

Detailed Description Text (16):
In the embodiment shown, the desk 3 constituting the medicine injection station is mounted on a guide path referenced 12. The desk can move in either direction as shown by double-headed arrow 13 so as to be located adjacent to any one of the sets of drawers, or any one of the storage modules.

Detailed Description Text (17):
The desk 3 has a reception zone 14 for receiving medicines taken from the storage bay, and an injector member 15 for injecting medicines into the buckets 5 of the delivery conveyor 4, with each bucket receiving only one medicine. The injector member 15 is shown diagrammatically in the form of a trap door incorporated in the surface of the desk.

Detailed Description Text (19):
The desk also includes various display lamps and control knobs, not shown. Further, although not shown specifically in FIG. 1, the desk is fitted with a device for establishing its own position along its guide path, said device being constituted by a coder, for example. The desk may be coupled to a motor for driving it along the guide path 12 in one direction or the other.

Detailed Description Text (21):
The closed loop delivery conveyor 4 having buckets 5 is driven at constant speed in one direction only, as indicated by arrow 20. The buckets are mounted so as to be capable of tipping upside-down when they pass over one of the transfer members 9 for transferring medicines from the delivery conveyor to the sorting conveyor.

Detailed Description Text (23):
The sorting conveyor 6 having trays 7 of packs 8 comprises two chains or belts running in parallel and having the trays 7 extending therebetween. These two chains or belts are coupled so as to be driven synchronously. The sorting conveyor 6 is driven stepwise in either direction as indicated by double-headed arrow 21. The trays 7 on the sorting conveyor 6 may either receive a single compartmented patient pack 8, as illustrated, or else a plurality of juxtaposed smaller individual packs. These packs are mounted on the trays 7 or are removed therefrom at a work station having access to the sorting conveyor for pack manipulation, as shown diagrammatically by double-headed arrow 22.

Detailed Description Text (25):
The position of each tray, and thus the position of each pack carried by a tray is advantageously determined on the sorting conveyor. A coder or code reader 28 (as appropriate) identifies each of the packs or pack-carrying trays when the packs are mounted in the sorting conveyor. This identification data is supplied to the control unit 10 together with data concerning the displacement of the packs in one or other direction of arrow 21, thereby enabling the control unit 10 to establish the position p8 of each pack 8 on the sorting conveyor.

Detailed Description Text (29):
The prescriptions or orders for each of the patients in a group of patients are directly keyed in to the control unit 10 from terminals distributed in the various services in the hospital, or else they are keyed in to the unit 10 from a terminal local thereto. The operator then places as many individual packs 8 as there are orders or patients on the trays of the sorting conveyor 6. The packs are simultaneously identified by the unit 10. The unit 10 then associates each pack with a different respective one of the orders and keeps permanent track of the positions of the packs on the sorting conveyor so as to make up each batch in the appropriate pack. Advantageously, the packs are also marked in the clear with the name or the number of the various patients for which they are intended. A keyboard (not shown) enables the operator to key in this information in the clear into the control unit 10 which then matches up the various batches and the various packs;

Detailed Description Text (30):
on the basis of the order data memorized in the unit 10, the control unit 10 establishes a combined list of requirements including the total number of medicines required for each type of medicine that has been ordered at least once. The control unit 10 then controls the process of making up the batches of medicines by displaying to the operator the types of the medicines which should be taken, together with the corresponding quantities required, and the locations of the medicines in the storage bay, and this continues repetitively for all the varieties of medicine required;

Detailed Description Text (31):
the operator positions the desk or controls the positioning thereof so as to bring it substantially level with the set of drawers containing the displayed variety of medicine, takes a handful of individual medicines from the drawer, said handful corresponding approximately to the required quantity, and places the medicines on the reception zone 14 of the desk 3. This operation is represented diagrammatically by arrow 30 leading from one of the drawers 2 to the zone 14 on the desk;

Detailed Description Text (32):

the operator then passes the unit medicines taken from the drawer one-by-one past the read window 16 and into the injector member 15 for injection into the delivery conveyor 4. This operation of feeding the injector member together with prior reading of the identification codes marked on each unit medicine is represented diagrammatically by arrow 31. Thus, the unit medicine to be injected onto the delivery conveyor is simultaneously verified and counted, and once the number of injected medicines of the same type has reached the number requested, the operator returns the remaining medicines to the drawer from which they were taken;

Detailed Description Text (33):
the injector member injects the unit medicines one after another into successive buckets as they pass therebeneath, without stopping the buckets and ensuring that only one unit medicine is injected into each bucket. There is no need for all of the buckets driven by the delivery conveyor and passing beneath the injector member to receive a medicine. Arrow 32 represents this injection operation. The bucket then conveys the unit medicines towards the transfer members;

Detailed Description Text (35):
the control unit 10 organizes rendez-vous between successive buckets on the delivery conveyor which is driven at constant speed and in one direction only with the packs on the sorting conveyor which is driven stepwise in either direction. The rendez-vous take place via the hoppers of the transfer members 9. This is done from the position data p5 relating to each bucket on the delivery conveyor carrying a unit medicine and the position data p8 of each pack on the sorting conveyor. Arrow 34 represents the operation of passing the unit medicine contained in one of the buckets into an appropriate hopper. This is done by the unit 10 causing the bucket to rotate into an upside-down position over the hopper. Arrow 35 represents the operation of passing a medicine from one of the hoppers into the corresponding compartment of the appropriate pack. When, for whatever reason, the unit medicine contained in one of the buckets is not transferred as the bucket passes through the transfer members, the bucket containing the medicine is merely recycled and the medicine can be transferred next time it passes through the transfer members after looping once all the way round the delivery conveyor; and

Detailed Description Text (36):
after all the different varieties of medicine have been processed, one after the other, the packs on the sorting conveyor contain respective batches of medicines for the various different patients in a given group.

Detailed Description Text (42):
The installation shown comprises, in order and one after the other: a first or "terminal" module 40, three storage modules each referenced 41 and together constituting the medicine storage bay, a tensioning and drive module 42, two sorting modules each referenced 43, and a second terminal module identical to the first terminal module 40 and likewise referenced 40. The desk in this installation bears the same reference numeral 3 as used above and projects from the front of one of the storage modules 41. It has a linear guide path 112 shown in dashed lines and is capable of moving in either direction, as shown in double-headed arrow 113 therealong, in order to take up a position in front of any one of the three storage modules.

Detailed Description Text (43):
In this rectilinear configuration for an installation, the delivery bucket conveyor is referenced 104. It is constituted by a closed loop running over substantially the entire length of the installation. In this case, the loop occupies a vertical plane having one horizontal branch running substantially along the top of the installation and having its other horizontal branch running along at an intermediate level beneath the desk 3. Each of the two terminal modules 40 has a pair of deflector wheels 44 defining a respective vertical branch of the closed loop of the conveyor. The tensioning and drive module 42 located between the

storage modules 41 and the sorting modules 43 includes a drive wheel 45 coupled to a drive motor (not shown) which is housed therein and which drives the delivery conveyor.

Detailed Description Text (46):
In each sorting module 43, the corresponding sorting conveyor with trays is referenced 106. Each sorting conveyor is constituted by a pair of closed loops which are linked through the loop of the delivery conveyor and which extend over substantially the full height of the installation. Each of these loops occupies a vertical plane and is disposed to have two horizontal portions passing beneath corresponding ones of the long horizontal branches of the delivery conveyor. Each sorting module includes two sets of four wheels arranged in pairs so as to deflect each of the closed loops through a right angle at each wheel. In each set of four wheels, three of the sets of wheels are deflector wheels only and are referenced 48 while the fourth set of wheels is also a set of drive wheels and is referenced 49. Each set of drive wheels 49 on each of the two belts of each sorting conveyor 106 is coupled to a corresponding motor and gearbox unit including indexing means, and serving to drive the sorting conveyor in either direction.

Detailed Description Text (49):
In each sorting module 43, there are two transfer members referenced 9 in FIG. 1, one for each of the two possible transfer zones, to enable suitable transfers to take place between the delivery conveyor 104 and the sorting conveyor 106 in the sorting module.

Detailed Description Text (50):
All of the sorting modules are identical to one another and they are mounted side-by-side, one after the other.

Detailed Description Text (51):
FIGS. 4 and 5 concern a second or L-shaped installation. The various modules making up the installation are disposed around an L-shape. Where these modules are identical to modules in a rectilinearly configured installation, they are designated by the same references. It can be seen that this installation comprises a first terminal module 40, storage modules 41 disposed side-by-side one after the other in the two branches of the L, a tensioning and drive module 42 beyond the storage module sequence or bay, followed by two sorting modules 43, and a second terminal module 40.

Detailed Description Text (55):
In this L-shaped installation, the desk 3 which projects from the front of one or other of the storage modules 41 is movable in translation in either direction along double-headed arrow 213 past all of the storage modules in the storage bay, and its guide path 212 is shown in dashed lines and follows an arcuate transition around the corner of the L-shape.

Detailed Description Text (57):
One of the two main arms of the U in the installation is truncated. Where the modules in this installation are identical to modules in either of the preceding configurations, they have the same references, and the component parts thereof are likewise given the same references.

Detailed Description Text (59):
In this configuration, the delivery conveyor is referenced 304 and each of the sorting conveyors is referenced 306. The delivery conveyor occupies a U-shaped closed loop with one of the arms of the U-shape being truncated. The closed loop passes around the installation substantially along the top thereof, up or down the ends thereof and beneath the desk 3. Each of the sorting conveyors comprises two closed loops linked through the loop of the delivery conveyor and located on the non-truncated arm of the U-shape.

Detailed Description Text (61):
The desk 3 in this installation projects forwardly from one of the storage modules 41. It is mounted to move in either direction indicated by double-headed arrow 313 past the front of the entire storage bay including the two angle modules 44'. Its guide path 312 is shown in dashed lines and follows two arcuate transitions located in the angle modules 40'.

Detailed Description Text (65):
The installation shown in FIG. 8 comprises three storage modules 41 of the drawer type and each designated by the same reference 2 as is used in FIG. 1, together with a single sorting module 43. The tensioning and drive module 42 is located between the storage modules and the sorting module, and the ends of the installation are constituted by respective terminal modules 40.

Detailed Description Text (66):
The delivery conveyor is referenced 104 and the sorting conveyor is referenced 106. Two transfer members 9 are provided to perform transfers from the delivery conveyor to the sorting conveyor within the sorting module 43. The desk 3 movable in either direction as shown by double-headed arrow 113 in front of the three storage modules 41 along its guide path 112 serves to inject medicines after they have been taken from one or other of the drawers 2 onto the delivery conveyor 104 where it passes beneath the desk.

Detailed Description Text (68):
The storage modules 41 used in the installation are identical to one another. One of these storage modules is described below with reference to FIG. 8 and to FIG. 9 which is a side view thereof, showing the storage module 41 with the moving desk 3 placed in front of it.

Detailed Description Text (69):
Each of the storage modules 41 is generally in the form of a piece of furniture or a chest of drawers 50 firmly mounted on the ground by means of a base 51 which projects forwardly, and having an overhanging cornice 52 projecting from the top of its front face. The cornice 52 encloses a first guide path 53 for one of the horizontal lengths of the delivery conveyor 104 having buckets designated by reference 5 in FIG. 1. Another guide path 54 is provided for the other horizontal length of the conveyor 104 and its buckets 5 on top of the projecting portion of the base 51 in a support structure 55 which is fixed thereto.

Detailed Description Text (72):
In this portion, the drawers 2 advantageously slope down towards the operator, as shown in FIG. 9, i.e. down towards the front of the installation. This sloping disposition provides free access at 58 into each of the drawers between their front edges and the risers and cross-pieces which separate the drawers from one another. This sloping disposition also makes it possible to grasp each drawer by using its front edge in order to open the drawer more fully to take medicines out therefrom or to fill it up with medicines. Further, the slope naturally causes medicines to accumulate towards the front of each drawer.

Detailed Description Text (75):
It can also be seen, in FIG. 9, that the desk 3 which does not belong to any specific one of the storage modules in front of which it runs is equipped with means for injecting unit medicines into the buckets 5 of the delivery conveyor 104. These injection means are mounted in the housing of the desk. They are designated in a general manner in FIG. 9 by the same reference 15 as is used for the trap door representing them in FIG. 1.

Detailed Description Text (76):
Arrows 30, 31, and 32 marked in FIG. 9 correspond to the arrows having the same

reference numerals in FIG. 1 and represent operations performed between the storage module and the desk, and in particular they represent the operation of taking medicines from one of the drawers 2, the operation of passing a medicine past the code reader and into the injector means 15, and the operation of injecting the medicine into one of the buckets of the delivery conveyor as it is driven under the desk.

Detailed Description Text (80):
FIG. 10 uses the same references as are used in FIG. 3 to designate the three deflection wheels and the drive wheel for one of the two endless chains of the sorting conveyor (the other chain not being shown in the figure). These items are not described again. FIG. 10 also shows the same arrows with the same references as in FIG. 1 to indicate the various operations performed at the sorting module, namely:

Detailed Description Text (82):
arrow 34 showing how a medicine is transferred from an upside-down bucket 5 into one of the transfer members 9; and

Detailed Description Text (83):
an arrow 35 showing how a medicine is transferred from one of the transfer members 9 into a pack 8.

Detailed Description Text (85):
FIGS. 11, 12, 13, and 14 show one of the above-described buckets 5 of the delivery conveyor 104 which is itself merely represented by dashed lines and is described in greater detail below. The bucket is semi-cylindrical in shape. It is advantageously made of plastic material. Its diameter may be about 80 mm, for example and its length may be 150 mm.

Detailed Description Text (86):
The bucket 5 is mounted on a support shaft 70 which is anchored substantially at the center of one of the semicircular end faces of the bucket. The support shaft 70 projects substantially axially away from the bucket. A toothed wheel 71 is fitted thereon adjacent to the bucket and is fixed relative thereto. Next to the wheel 71 there is a guide shoe 72 whose cross-section relative to the shaft 70 is square, and the shoe is also fixed to rotate with the supporting shaft 70. The shaft is mounted to rotate freely in a support part 73 which fixes the bucket to the delivery conveyor 104. A lever 73 is fixed to the free end portion of the support shaft 70 and carries a wheel 75 mounted free to rotate about a stub shaft 76 at its opposite end to the end fixed to the shaft 70.

Detailed Description Text (90):
FIGS. 15 and 16 are an elevation view and a plan view respectively, both being in partial section and showing one of the trays 7 of the sorting conveyor and a pack 8 carried thereby. The section plane of FIG. 16 is marked XVI--XVI in FIG. 15. The tray is rectangular in shape having a relatively shallow upstanding peripheral rim. It is advantageously made of plastic material. The tray 7 comprises conventional adjustable wedging elements, (not shown) enabling it to adapt to the exact bottom dimensions of the packs inserted therein, so as to hold said packs securely thereon.

Detailed Description Text (92):
The tray 7 is carried by two identical support shafts 80 which extend from either side thereof from its side rims. The tray is fixed to said shafts. Each of the shafts 80 has a guide shoe 81 adjacent to the tray and fixed to the shaft which is itself carried by a supporting part 82 for fixing the shaft to a corresponding one of the chains 106a and 106b of the two-chain sorting conveyor. The shafts 80 are free to rotate in said supporting parts 82. In addition, the free end of each shaft 80 carries a crank lever 83 having a wheel 84 mounted free to rotate about a stub

shaft 85 at the end of the crank lever furthest from the shaft. The crank lever is mounted to rotate with the shaft.

Detailed Description Text (95):
FIGS. 17, 18, 19, and 20 are various different views of the desk which is used as an injector station for injecting unit medicines into the buckets of the delivery conveyor. In these figures, the desk is given a general reference 3, while double-headed arrow 113 indicates the directions in which the desk may be moved one way or the other. General reference 5 designates the, or each, bucket and reference 104 designates the delivery conveyor carrying and driving the buckets, with these references being the same as those used in FIG. 9.

Detailed Description Text (102):
The drawer 110 has an open bottom (not referenced) and rests directly over the bottom plate 103 having the opening 105. A small amount of play is provided. The top of the drawer is also open and it carries a side flap 117 extending forwardly beneath the working surface 101 of the desk. The drawer can occupy two possible limit positions on the slides 111; one of these positions being a medicine-reception position and the other being a position for injecting medicine into a bucket 5, and these two positions corresponding substantially the two end-of-stroke positions of the drawer. In its medicine-receiving position, as shown in FIG. 19, the drawer lies beneath an opening 119 provided through the top surface of the desk. In its position for injecting a medicine into a bucket 5 passing beneath the desk, as shown in FIG. 20, the drawer is situated at the end of the opening 105 provided through the bottom plate 103 of the desk and corresponding to a similar window 118 provided through the top surface of the support assembly 55. In an intermediate position between the reception position and the injection position, the bottom of the drawer is already open over the windows 105 and 118, with the lengths of the windows increasing the length of time available for transferring a medicine into a bucket 5.

Detailed Description Text (108):
A pivot lever 130 has one of its ends hinged to the armature of the electromagnet 120.

Detailed Description Text (113):
For this operation of the medicine injecting station as formed by the desk, with unit medicines being injected into various buckets, the electromagnet 120 receives its activation control signal from the code reader 116 mounted in the desk beneath the read window 16 and also from the central control unit 10. This activation control signal is given when the medicine identity detected by the code reader 116 matches one of the varieties of medicine currently being processed as defined by the control unit of the installation, and when the bucket arriving beneath the drawer is empty. The various arrows in FIGS. 17 to 20 match those marked on FIGS. 1 and 8 and indicate how the injection station operates.

Detailed Description Text (114):
FIGS. 21, 22, and 23 are fragmentary section and elevation views of one of the transfer members shown in FIGS. 8 and 10, with the elevation views of FIGS. 22 and 23 showing, in particular, how the transfer member is associated with the delivery conveyor and its buckets, respectively when a medicine is not transferred from the bucket and when a medicine is transferred. The various items shown in these figures have the same references as they do in FIGS. 8 and 10.

Detailed Description Text (117):
It can be seen in FIG. 21 that the individual hoppers 150 are four in number, are disposed side-by-side parallel to the delivery conveyor 104 and transversely relative to the sorting conveyor 106a-106b so as to transfer a medicine from one of the buckets to the patient pack located beneath the transfer member.

Detailed Description Text (120):
The bottoms of the funnels 152 open out to respective ducts 151. The funnels are advantageously obtained as a single piece which fits on the flared top ends of the ducts and the assembly is held together by conventional mechanical means known to the person skilled in the art and not shown.

Detailed Description Text (123):
The large side face of the transfer member 9 which extends between the path of the buckets 5 and the associated delivery conveyor 104 carries a mechanism for transferring medicine from one of the buckets 5 to one of the hoppers 150. Each hopper has one such mechanism associated therewith and each mechanism comprises a slide 155, a rack 156, a pivoting lever 157 connected both to the slide 155 and to the rack 156, with the connections thereto being on either side of its pivot point, and an electromagnet 158 for actuating the lever 157 and having its armature pivoted to one of the ends of the lever.

Detailed Description Text (124):
In each of these mechanisms corresponding to the various hoppers 150, the slide 155 is mounted level with the path of the guide shoe 72 fixed on the support shaft 70 of each bucket, while the rack 156 is level with the path of the toothed wheel 71 likewise fixed on the support shaft 70 of each bucket (see FIGS. 11 to 14). The slide and the rack are actuated in translation in opposite directions by the pivot lever 157 which couples them together, and this is indicated by arrows 155a & 156a and 155b & 156b on FIGS. 22 and 23 showing that whenever one of them is retracted away from the corresponding item on the shaft 70 of each bucket, then the other of them is engaged with the corresponding item on the shaft 70 of the same bucket. Thus, with reference to FIG. 22, and assuming that no medicine is to be transferred from the bucket 5 into the individual hopper 150 over which it is passing, the electromagnet 158 acts in the direction indicated by arrow 158a to pivot the lever 157 so that the slide 155 is in its high position and the shoe 72 bears thereagainst. Simultaneously the rack 156 is thus in its low position and is retracted away from the toothed wheel 71. Otherwise, and with reference to FIG. 23, when medicine is to be transferred from the bucket into the hopper shown, the electromagnet 158 acts in the direction of arrow 158b on the pivoting lever 157, thereby lowering the slide 155 so that it is retracted away from the shoe 72, thus allowing the bucket to rotate, while simultaneously raising the rack 156 to its high position so that it engages the toothed wheel 71 and drives it, thereby rotating not only the toothed wheel 71, but also the support shaft 70 and the bucket 5.

Detailed Description Text (125):
By tipping the bucket upside-down as shown by arrow 159 over one of the hoppers, the medicine which it contained is transferred into said hopper.

Detailed Description Text (126):
Although the successive racks 156 belonging to different hoppers are disjoint and avoid any of the buckets from turning over at the ends of their passages over one or other of the hoppers, the successive slides 155 are substantially contiguous, as shown in FIG. 21. The length of each rack and the diameter of the toothed wheels 71 are designed so as to ensure that the toothed wheel rotates through a full turn thereby rotating the bucket through a full turn over the corresponding hopper. The electromagnet 158 actuating the transfer mechanism for transfer into an appropriate one of the hoppers is controlled by the central control unit 10 of the installation (FIG. 1) when it predicts a possible coincidence at the transfer member between the bucket containing a medicine and the pack which is to receive it.

Detailed Description Text (128):
FIG. 24 is a fragmentary elevation view showing the buckets 5 on the delivery conveyor 104 and how they are held horizontal over their entire path other than those portions where they may be turned upside-down over the transfer zones, as

described with reference to FIGS. 20 to 23. This fragmentary view shows a portion of the top length of the conveyor inside the drive and tensioning member 42 shown in FIG. 8. This FIG. 24 is described with reference also to FIGS. 11 and 12 relating to one of the buckets 5 shown associated with the delivery conveyor (in dashed lines) shown in a position appropriate to a portion of the bottom length of the conveyor.

Detailed Description Text (129):
The delivery conveyor 104 is of the caterpillar type comprising an endless loop of successive solid links 160 (see FIG. 12) which are hinged to one another about assembly axes 161 (see FIG. 24). This configuration gives the conveyor adequate flexibility for all portions of its path, and in particular for the curved portions. One of the faces of each link, and thus one of the faces of the conveyor as a whole, is smooth, and in this example it is the inside face of the conveyor loop which is smooth. The support parts 73 for fixing the various buckets are fixed to said smooth face with each support part being fixed to a corresponding one of the links, and with the various support parts being at the desired pitch for the buckets. The other face of the conveyor, in this case the outer face, has teeth (see FIG. 11). It has assembly lugs 162 of semicircular cross-section and extending across the conveyor, with the hinge axis between successive links passing through said lugs, and guide lugs 163 constituted by L-shaped members running along the sides of each link with the shorter legs of the L-shapes projecting outwardly from the conveyor.

Detailed Description Text (133):
In the curved portions of its path, the conveyor 104 engages toothed wheels disposed on the inside of the conveyor path. These wheels are drive wheels, deflection wheels, and tensioning wheels and they have the same references as given in FIG. 8, i.e. 45, 46, and 47. The semicircular projections 77 on the support parts 73 of the various buckets mesh in corresponding notches between the teeth of the wheels 45 to 47. An arcuate transition guide 170 outside the conveyor path is associated with each of the toothed wheels on the inside of the path in order to hold the buckets horizontally as they pass through the curved portions of the path. The transition guide is mounted to one side of the conveyor and is a channel section member which is open towards the conveyor in order to receive the wheel 75 mounted on the crank lever 74 fixed to the support shaft 70 of each bucket. The curve is chosen to ensure that the buckets are kept horizontal. As the shaft 70 rotates along said curved portion of the conveyor path, the transition guide ensures that the face of the guide shoe 72 which presses on the corresponding side guide of the horizontal rails is appropriately changed over from the inlet to the outlet of the transition guide.

Detailed Description Text (134):
FIGS. 25 and 26 are fragmentary elevation and perspective views showing how the trays are disposed on the sorting conveyor, which has two chain loops, with the figures showing both the linear portions and the curved portions of the sorting conveyor path. These figures show only one of the two sorting conveyor chains between which the pack-carrying trays 7 are mounted, namely the chain 106a, with the assembly being identical for the other chain. The description of FIGS. 25 and 26 is also made with reference to FIGS. 15 and 16 showing a tray and the associated conveyor chains 106a-106b in dashed lines, where FIGS. 15 and 16 both relate to the top horizontal portion of the sorting conveyor path, as do FIGS. 25 and 26.

Detailed Description Text (146):
Advantageously, as mentioned when describing FIG. 1, the bucket code is detected at the injection point on the delivery conveyor which is as far downstream as possible. This limiting injection point is made to correspond to an origin position p0 for the buckets on the delivery conveyor, the position of each bucket is then incremented at the rate determined by the speed at which the conveyor moves them. It is also advantageous for the control unit to display the successive varieties of

medicine required in an order corresponding to a one-way trip of the desk along the entire storage bay.

Detailed Description Text (149):
In the control unit 10, a programmed assembly performs an algorithm for predicting the most favorable possible transfer between the buckets and one of the packs in one of the sorting modules at a time, preferably beginning with the first sorting module through which the buckets pass. This algorithm enables the control unit 10 to keep track of successive coincidences between the buckets and appropriate packs and to "designate" on a case-by-case basis that one of the packs which it is most advantageous to position under one of the two transfer members in the module. Once a pack has been designated, the control unit 10 causes the sorting conveyor to drive the designated pack into position under the appropriate transfer member.

Detailed Description Text (153):
This algorithm and the stages therein for designating one of the packs in a sorting module are described below with reference to FIG. 28 which is a diagram showing:

Detailed Description Text (157):
The prediction algorithm consists in associating two lengths of the delivery conveyor with each of the various packs in the sorting module, with these lengths being referenced IHci and IBci for pack ci, where c0.ltoreq.ci.ltoreq.c29. For each pack, e.g. the pack in position ci, the length IHci corresponds to one of the transfer members, namely the top transfer member H, and the other length IBci corresponds to the other transfer member, namely the bottom transfer member B. They are both defined identically and they are limited by respective top and bottom thresholds depending on the transfer member concerned and referenced SH and SB for all of the packs, and by respective top and bottom processing limits depending on the transfer member concerned and referenced THci and TBci for pack ci.

Detailed Description Text (160):
Starting with these various pairs of processing intervals associated with the packs, the algorithm for predicting the most favorable transfer selects a "most favourable" one of the intervals in order to designate the pack to which the selected interval is associated and then controls displacement of that pack to bring it under the corresponding transfer member. This interval selection or pack designation is obtained by applying, in order, a sequence of selection criteria, of which the most important are as follows:

Detailed Description Text (161):
Criterion 1: designate the pack having the largest number of receivable medicines in one or other of the intervals attributed thereto, and then select the appropriate transfer member. If a plurality of packs satisfy criterion 1, apply criterion 2.

Detailed Description Text (162):
Criterion 2: from the packs selected by applying criterion 1, select that pack for which the most distant medicine that it is to receive counting from the corresponding transfer member is in the most favorable position, i.e. is the least distant one of the most distant medicines in question. If a plurality of packs remain selected after criterion 2 has been applied, then apply criterion 3.

Detailed Description Text (165):
In any event, if application of the pack-designating criteria does not result in just one pack being designated, then one of the potentially designatable packs is designated arbitrarily or the prediction algorithm is applied to the packs in the sorting module downstream from the sorting module previously considered.

Detailed Description Text (166):
It is also possible, by using successive intervals, to apply the prediction

algorithm to the packs of one or other of the modules and to give different priorities to the modules.

Detailed Description Text (167):
Once one of the packs has been designated, it is moved into position under the appropriate transfer member. Once the pack has stabilized, the medicines which it may receive from its processing interval are transferred thereto. The corresponding buckets are recorded as being empty in the control unit.

Detailed Description Text (168):
The present invention has been described essentially with reference to the embodiments shown in the accompanying drawings. Obviously various modifications can be made thereto without going beyond the scope of the claims. In particular, some or all of the sorting modules may be fitted with only one transfer member, and a pair of sorting modules could be superposed rather than being juxtaposed, with the delivery conveyor passing over appropriate deflector wheels to zig-zag through the sorting conveyor loops of each of the sorting modules.

CLAIMS:

1. A method of making up batches of small items in individual packs in response to a set of orders specifying the different varieties of item required in each batch together with the corresponding quantities thereof, and an installation comprising a storage bay storing a plurality of a possible varieties of item, variety by variety, a first endless delivery conveyor holding a plurality of buckets defining a closed loop delivery path for delivering individual items, the delivery conveyor running substantially around said installation with a clear space between opposite runs extending substantially along the installation; a station for injecting individual items onto said buckets mounted facing both said storage bay and said delivery conveyor at least one second endless sorting conveyor holding packs for sorting into batches the injected items, mounted orthogonally to the delivery conveyor and defining a closed loop sorting path, a transfer station for transferring items from said closed loop delivery path to said closed loop sorting path orthogonal to the delivery path for making up said batches, said method comprising the following steps:

memorizing a set of orders and combining the orders in the set to establish a list of all of the different varieties of item ordered together with the quantity of each variety required to make up all of the batches specified in the set of orders;

assigning the packs a corresponding one of the ordered batches of items;

taking each of the varieties of items in said list in succession from said storage bay and injecting the required quantity of items at said injection station one-by-one into said buckets of said delivery conveyor; and

driving said delivery conveyor and said sorting conveyor to cause said items which have been injected into said buckets on the delivery conveyor to coincide with the packs that are to receive them in said at least one transfer zone between the paths and effecting transfer of each of said items at said transfer zone into a suitable pack.

2. A method according to claim 1, wherein said coincidences are established by causing said packs to move in one direction or the other around the corresponding closed loop sorting path, said movements being determined on the basis of first data associated with each item as it is injected into a bucket of said delivery conveyor and representing its location thereon, and on the basis of second data associated with each batch and the corresponding pack attributed thereto and representing the location of said pack on its closed loop sorting path.

3. A method according to claim 1, wherein coincidences between the injected items and the packs that are to receive them are organized by attributing a processing interval on each sorting path to each of the packs in the sorting path as seen from each of the transfer zones, in defining each processing interval between two limits related to the corresponding transfer zone, with the more upstream one of said limits from the corresponding transfer zones being a threshold limit representing a defined number of item positions on the first path, and with the other one of said limits being a processing limit representative of the number of items capable of being injected during the time interval required for displacing the pack under consideration to the transfer zone under consideration.

4. A method according to claim 3, wherein one of the packs on said sorting path is designated to be the pack which is positioned in a transfer zone to receive an item, the designated pack being selected by selecting that one of the processing intervals attributed to the various packs which contains the largest number of injected items suitable for being received by the corresponding pack.

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L2: Entry 1 of 4 File: USPT Apr 3, 2001

DOCUMENT-IDENTIFIER: US 6209779 B1
TITLE: Laminated mailer blank with transparent window

Abstract Text (1):
A mailer blank having a return receipt post card which can be printed on both faces thereof by a single pass through a non-impact, simplex printer is described. The return receipt post card is configured to present all areas to be printed with variable information on a single face of the postcard, thereby allowing printing of all variable information in a single pass through the printer. The post card is provided with fold lines such that a unique folding pattern results in formation of a post card of standard size and uniform thickness, and having the variable printed information ultimately positioned at desired locations on both sides (faces) of the post card.

Brief Summary Text (8):
U.S. Pat. No. 4,951,864 to Dicker describes apparatus a typical prior art mailer blank and the folding and sealing thereof. Dicker's mailer blank includes remoistenable glue strips on the longitudinal sides and one traverse side of the blank, which strips are moistened prior to folding into a mailer envelope. A window aperture shown within the mailer is formed by adhesively attaching a transparent sheet to extend across a rectangular opening in the paper of the mailer. However, the transparent sheet overlaps the opening, being adhesively attached to the paper around the opening, causing the localized increase in thickness.

Brief Summary Text (13):
The various mechanisms used to feed sheets one at a time through printing and folding devices are very intolerant of curled sheets, particularly if the curl results in the corners of an individual sheet being raised or lowered with respect to the central part of the sheet. Specifically, the curl prevents individual sheets from being properly separated in the mechanisms designed to separate the sheets so that they can be fed one at a time for printing or folding. In addition, the curl causes the corners of the sheets to be caught on various obstructions along the paper feeding path of the printing and folding devices. In this way, failures to feed sheets and various types of paper jams are caused as the equipment is operated.

Brief Summary Text (17):
Yet another problem in the mailing form industry is to provide a form having a return receipt post card of uniform thickness which can be conveniently printed by a single pass through a simplex, non-impact printer. Previously, confirmation of receipt of a mailed document required filling out a separate return receipt post card for a particular addressee. Typical return receipt post cards have address information or other identifying information printed on both sides of the card. Thus, not only do conventional return receipt post cards require filling out a separate form, but can also be disadvantageous because they cannot ordinarily be printed on a simplex, non-impact printer by a single pass through the printer.

Brief Summary Text (20):
It is also desirable to provide such a form with a return receipt post card integral therewith, wherein the return receipt post card is of uniform thickness

and can have information printed on both faces of the card in a single pass through a non-impact, simplex printer.

Brief Summary Text (22):
In accordance with one aspect of the invention, there is provided a mailer blank having an aperture to form a window allowing printed information to be viewed or read through this formed window. This formed window can have a transparent layer of material covering the aperture.

Brief Summary Text (24):
In one embodiment, the mailer blank can have a transparent layer and an opaque layer on one side of said transparent layer. The opaque layer includes an aperture covered by said transparent layer to form a window. Further, the opaque layer and transparent layer are co-extensive outward from the aperture to lateral and transverse edges of the mailer.

Brief Summary Text (26):
In yet another embodiment of the subject invention, the mailer blank comprises a return receipt post card which can be printed on both faces thereof by a single pass through a non-impact, simplex printer. The return receipt post card in this embodiment is configured to present all areas to be printed with variable information on a single face of the postcard, thereby allowing printing of all variable information in a single pass through the printer. The post card is provided with fold lines such that a unique folding pattern results in formation of a post card of standard size and uniform thickness, and having the variable printed information ultimately positioned at desired locations on both sides (faces) of the post card.

Brief Summary Text (27):
This embodiment has several additional advantages. For example, the form has the capability of being folded and duplexed to form a post card of uniform thickness meeting the requirements of the United States Postal Service (USPS). The generation of variable printed information on a single surface of the form by a single pass through a simplex, non-impact printer also guarantees that a mismatching of the variable printed information will not occur.

Brief Summary Text (28):
This embodiment can also be provided in several different variations. One variation provides windows having a backing or panel of transparent material which can serve as protection of the envelope contents. Preferably, the transparent panel is laminated to the inner face of the printed sheet so that any risk of jamming of the printer or the folder/sealer device is substantially reduced. An alternative variation of this embodiment of the subject invention comprises apertures or windows as cutout areas.

Brief Summary Text (29):
Yet another variation of this embodiment has the letter portion of the form selectively adhered, e.g., glued, around the perimeter edge only, such that the inner faces of the plies can be preprinted, thereby providing up to three printable faces of a letter in the form. Thus, the form can provide more space for text than a conventional folded form having only one face available for printing. Perforated strips formed around the perimeter, when removed by the addressee, can defeat the adherence around the perimeter edge and allow up to three page faces of the plies to be viewed with text printed thereon.

Drawing Description Text (19):
FIG. 16 shows a front face of the top ply of the form according to one embodiment of the subject invention;

Drawing Description Text (20):

FIG. 17 shows the back face of the top ply of the form according to one embodiment of the subject invention;

Drawing Description Text (22):
FIG. 19 shows an inner face of the back ply of the form according to one embodiment of the subject invention as shown in FIGS. 16-18;

Drawing Description Text (23):
FIG. 20 shows the back, or outer face of the back ply of the form according to one embodiment of the subject invention as shown in FIGS. 16-18;

Detailed Description Text (6):
Alternatively, one of paper layer 26 or 28 may be eliminated in FIG. 2, in which case the, thickness of the remaining paper layer should be 0.004 inches.

Detailed Description Text (9):
Alternately, a mailer blank of the type described with respect to FIGS. 2 or 3 may be made using a paper layer 26 laminated to a one side of transparent layer 24 or 38, with the opposite side of transparent 24 or-38 being coated with opaque layer 40. In this case, the thickness of transparent layer 24 or 38 would be 0.001 inches.

Detailed Description Text (11):
One preferred type of material that may be used for transparent layers 24 and 38 is Melinex 1311, one distributor of which is Plastic Suppliers, 1174 Hayes Industrial Drive, Marrietta, Ga. 35062. Melinex 1311 is a clear film with anti-static properties on both surfaces of its web. Its surface resistivity, independent of gauge, is 2.times.10.sup.10 ohms/square, which overcomes the static electricity and laser corona based problems which generally prevent stacks of plastic films from being used with laser printers. Moreover, Melinex 1311 film does not suffer from unacceptable shrinkage, when passed through the high heat of the fusing stage of a laser printer. Melinex 1311 polyester film is described in more detail in U.S. Pat. No. 4,371,489 in the name of Patrick T. McGrail and entitled "Production of Antistatic Thermoplastic Films". Additional problems encouraging the use of Melinex 1311 film are discussed in my co-pending patent application, Ser. No. 08/394,062, filed Dec. 1, 1994 and entitled "Transparent Security Pocket Compatible With Non-impact Printers". Melinex 1311, or its equivalent without the antistatic coating, may be used as the transparent layer where paper covers substantially both sides of the transparent plastic film, such as shown in FIG. 2.

Detailed Description Text (12):
Referring now to FIG. 4, a plan view is shown of two paper webs 46 and 50 and one transparent web 48. These three webs 46, 48 and 50 are laminated together and cut to length to form mailer blank 20 shown in FIG. 2. More specifically, inner paper web 46 forms inner paper layer 26, transparent web 48 forms transparent layer 24, and an outer paper web 50 forms outer paper layer 28. Preferably, each paper web 46 and 50 is imprinted with a fine array of adhesive dots 52 on surface 54 to be applied against transparent web 48. In order to avoid cluttering, a relatively course array of dots 52 is shown for illustrative purposes in FIG. 4. Dots 52, for example, are formed of a pressure sensitive adhesive applied using either a screen printing process or a flexographic printing process. Applying adhesive dots 52 in this manner minimizes the bulk of the adhesive, while providing a desirable type of flexibility in mailer blank 20 at a cost effective price.

Detailed Description Text (14):
Continuing to refer to FIGS. 2 and 4, the laminated web formed by laminating paper webs 46 and 50 to transparent web 48 is subsequently cut into suitable lengths, each such length to be used as a mailer blank 20. In FIG. 4, the location of the cuts between adjacent mailer blanks is indicated by lines 54. Conventional electronic registration or a pattern preprinted on the non-adhesive coated surface

of one of the paper webs 46 or 50 may be used for determining the location of each of the apertures 30 and cuts 54. Various perforations and/or cuts through one or both paper layers may also be made on the laminated web at appropriate locations prior to making each cut 54 to separate the web into mailer blanks 20. As described hereafter, these additional perforations and cuts facilitate the subsequent folding and/or use of each mailer blank 20 into an envelope configuration.

Detailed Description Text (17):
Both fixed information, which does not vary from one mailer 20 to another during the preparation of a batch of mailers 20, and variable information, which does vary from one mailer 20 to another, are printed on inner paper layer 26 formed as a part of web 46. The variable information includes at least a name and address, which is to be printed-in area 76 and oriented to be visible through aperture 30 when mailer 20 is folded along lower fold line 72 in the direction indicated by arrow 78. Thus, the printed information should be oriented as indicated by the orientation of the letter "A" 74 in FIG. 5. Variable information is expected to be printed using a simplex non-impact printer, such as a laser printer or an ink jet printer, whereas fixed information can be printed using the same non-impact printer or it may be preprinted during or after the manufacture of mailer 20 by normal commercial printing processes. Where the fixed and variable information are printed together, they may be printed during a single pass through the non-impact printer, as all necessary information need only be printed on inner paper layer 26.

Detailed Description Text (18):
Where fixed information is preprinted, colors and patterns not readily available using a non-color, non-impact printer may be included on form 20 and printing can occur on both inner layer 26 and outer layer 28. For example, the pre-printing may even occur on one or both of paper webs 46 and 50 (on the side opposite to the side on which adhesive dots 52 are placed) prior to applying adhesive dots 52 and laminating webs 46 and 50 to transparent web 48, as seen in FIG. 4.

Detailed Description Text (20):
Mailer 20 is prepared for mailing by folding first along lower fold line 72, in the direction of arrow 78, and then along upper fold line 70, in the direction of arrow 88. Pressure, or a combination of pressure and moisture, is applied to the adhesive strips 80 and 84 to seal mailer 20 in its folded condition, as seen in FIG. 6. A number of commercially available devices, well known in the art of producing mailers for distribution, may be used to facilitate both the folding operation and the activation of adhesive strips 80 and 84 through pressure or through a combination of moisture and pressure. U.S. Pat. No. 4,951,864 to Dicker describes both an adhesive system and a folding and sealing device which can be used for this purpose.

Detailed Description Text (27):
Referring specifically to FIG. 8, inner paper web 112 is laminated to an upper surface of transparent web 114, and outer paper web 116 is laminated to a lower surface of transparent web 114. Inner paper web 112 subsequently forms an inner surface of mailer blank 140, while outer paper web 116 subsequently forms an outer surface of mailer blank 140. On the surface of outer paper web 116, adjacent to transparent web 114, is a repeating array pattern of adhesive dots 118. As in FIG. 4, a relatively course array is shown for illustrative purposes. Transparent web 114 similarly has a repeating array pattern of adhesive dots 120, together with a hollow rectangular pattern 122, around which adhesive 126 has been applied in a continuous or more dense manner. Inner paper web 112 has a strip of release agent 124 coated thereon in a position to prevent its permanent adhesion to transverse adhesive strip 126. Adjacent to one edge of release agent 124 on inner paper web 112 is a slit tear line 127, which is formed after the lamination of webs 112, 114 and 116. To show the pattern of a release agent 124 in FIG. 8, inner paper web 112 is inverted from the orientation it must assume when it is laminated to transparent web 114.

Detailed Description Text (29):
In the process of laminating webs 112, 114, and 116, apertures 128 in paper webs 112 and 116 are aligned with one another and with clear area 130 in transparent web 114. At the same time, release agent 124 is aligned with transverse adhesive strip 126. Paper web 112 is generally attached to transparent web 114, through the array of adhesive dots 120, except in clear areas 130, 132 and 134 and in rectangular area 136 surrounded by hollow rectangular adhesive pattern 122. Paper web 116 is generally attached to transparent, web 114, except for similarly clear areas 130, 132, and 134. As previously described with to FIG. 4, keeping adhesive dots 120 away from edges 133 of mailer blank 140 prevents the contamination which could otherwise result from the outward squeezing of adhesive 120 as mailer blank 140 passes through the fusing station of a laser printer.

Detailed Description Text (36):
One preferred embodiment is illustrated in FIGS. 11-15. Referring to FIG. 11, the subject form 200 is shown in exploded perspective view to illustrate a front or top, substantially transparent sheet 201, and a back or bottom, substantially opaque sheet 220 which are superimposably adjoined to form the two-ply laminated mailing form.

Detailed Description Text (40):
On the right side of the bottom half 205 of front sheet 201 is provided an area for printing identification card information. This identification card information area 209 can be printed so that information (shown as "ID INFO" in FIG. 11), e.g., name, date of birth, address, identification number, or the like, can be provided on at least one removable identification card (ID card) 210 to be retained by the addressee. The ID card 210 can be formed by making a die cut or perforation 211 around the entire ID card information area such that an ID card containing the identification information is separable from the rest of the front sheet 201.

Detailed Description Text (41):
A variation of this embodiment shown in FIG. 11 illustrates formation of three ID cards 210 on a single sheet. Die-cut line 211 is made around the perimeter of each individual ID card. For efficiency, die cut line 211 is coextensive for adjacent ID cards.

Detailed Description Text (45):
The front sheet 201 can comprise a plastic or polymeric material, e.g., Melinex 311 which is commercially available. Typically, the front sheet has a thickness of between about 0.003 and 0.005 inches. The front sheet can be transparent or can be printed on one face with an opaque or contrasting color for enhancing legibility of certain variable information printed thereon. However, at least one area on the front sheet is not printed with an opaque or contrasting color so that it remains transparent to provide a window for viewing address information when the form is in its folded configuration. A preferred embodiment is shown in FIG. 11A wherein front sheet 201 (shown prior to the formation of die-cuts, perforations, or printing) is provided with two transparent areas 215 and 216 for viewing address information therethrough. Most preferably, transparent window area 215 permits viewing of the return address information, and transparent window area 216 permits viewing of the addressee information, printed on the bottom left half of the front sheet.

Detailed Description Text (46):
In one alternative variation of this embodiment, the inner face of top sheet 201 is provided with a magnetic identification strip positioned on the back of the card area to provide a conventional credit card identifier useful in accessing an automatic teller machine (ATM) or other device capable of reading such magnetic strips. Further, the inner face of ID card area 210 can be provided with an adhesive release material, as is known in the art, to facilitate removal of an ID card from its backing sheet without any residue adhesive on the card.

Detailed Description Text (47):
The back, or bottom, sheet 220 is configured to substantially conform to the areas or sections provided on the front sheet. Specifically, the back sheet 220 typically comprises a standard, e.g., 81/2.times.11 inches, size sheet of approximately equal dimension to the front sheet. One example of this embodiment is shown in FIG. 11, wherein the back sheet is divided along its central, longitudinal axis to provide a fold line 221, conforming to the position of fold line 202 provided in front sheet 201 when the sheets are superimposed.

Detailed Description Text (48):
The back sheet 220 can be noncontiguous, having at least one cutout area provided therein to form a window so that address information can be seen therethrough when the form is in a folded configuration. FIG. 11 illustrates one embodiment showing two cutout areas 222 and 223 corresponding in position to the transparent window areas 215 and 216 in FIG. 11A. Other variations of positioning and numbers of cutout areas would be readily understood according to need and in light of the description provided herein. Typically, however, this cut-out area is provided in the left side of the upper half of the back sheet for forming a conventionally positioned envelope when folded.

Detailed Description Text (54):
The back face of back sheet 220 can be preprinted with mailing indicia 230 in a position to provide standard envelope positioning of the indicia. Typically, as shown in FIG. 12, mailing indicia is printed on the same section half of the back sheet, i.e., in relation to fold line 202, as the cutout areas 222 and 223. This advantageously provides for forming, in a single folding step, an envelope having address information which is visible through transparent windows 222 or 223, and mailing indicia in proper position in accordance with United States Postal Service standards. See FIG. 13. Instructions for use can also be provided on the back face of back sheet 220. For example, instructions for tearing off the removable strips can be provided for opening the sealed envelope.

Detailed Description Text (61):
Another embodiment of the subject invention provides a mailer having an address viewing window and a return receipt postcard integral therewith. This embodiment is preferably used in connection with an automated folder/sealer for high volume mailings. Both the mailer and return receipt post card portions can have variable information, e.g., address information, correspondence text, postage indicia, or the like, printed on a single face thereof by a single pass through a simplex, non-impact printer. The mailer and return receipt post card portions can be manipulated such that the variable information can be viewed on their respective reverse faces. Variations of this embodiment, and the steps involved in its use, are illustrated in FIGS. 16-21. Generally, this embodiment of the subject invention comprises a two-ply form comprising front and back plies wherein these plies are adhered together in certain areas to form a single, laminated form of standard size, divided by fold lines or perforations into three distinct sections. Preferably, first and second sections form the mailer portion and third section forms the return postcard portion. The material for the plies can be any material, typically a paper material, which can be printed on by a standard simplex, non-impact printer. Such materials are commercially available and are described herein.

Detailed Description Text (62):
The front ply is a sheet of standard size, e.g., 81/2.times.11, 81/2.times.14 (legal size), A4, or the like, divided by fold lines or perforations into first, second, and third sections of particular size. The third section must be of sufficient dimension to form a postcard of standard size and to include an additional area which receives printed information on a first side or face from a simplex, non-impact printer. This additional area can then be folded back onto itself such that address information is in proper position on the reverse side or

face of the postcard portion. Typically, this third section is approximately 11/2times the standard height of a postcard. The first and second sections form the balance of the sheet and are of substantially equal size to each other such that they can be folded over along a fold line provided along the mid-line between the first and second sections to be mated with one another and form the mailer portion.

Detailed Description Text (67):
First and second sections 361 and 362 include perforations 366 and 367 along, and offset approximately 1/4to approximately 1/2inch from their side edges, to form tear-away strips 366A, 366B, 367A, and 367B. At least one of tear-away strips 366A and 366B, and at least one of tear-away strips 367A and 367B have a dry adhesive, preferably encapsulated glue as described herein or in the patents or applications incorporated by reference, disposed thereon so that when opposing faces of first and second sections are folded along fold line AA, adhesive disposed thereon contacts the opposing face along the interface of tear-away strips 366A and 366B and along the interface of tear-away strip 367A and 367B to hold the first and sections together along their side edges. Dry, encapsulated adhesive can also be disposed on at least one of either tear-away strip 368A, formed by perforation 368 along the top edge of first section 361, or in a mating configuration on the bottom edge of second section 362, between perforations BB and BB', which forms tear-away strip 450A. Tear-away strip 450A opposes tear-away strip 368A when first section 361 and second section 362 are folded over and mated to form the mailer portion 364 in the folded configuration of the mailer portion of the form. It would be understood that a preferred application of adhesive would be provided by an automated folder/sealer machine capable of disposing patterned adhesive at the time of folding and sealing the form. These folder/sealers are commercially available and are well known in the art. Such folder/sealers are generally capable of at least one of the following three variations: activating encapsulated adhesive in particular areas, moistening patterned moisture-activated adhesive, and patternly disposing adhesive. The form according to the subject inventions is adaptable to each of these various folder/sealers.

Detailed Description Text (69):
Advantageously, however, third section 363 can also include perforations 372 and 373 spaced from the outer side edges of section 363 such that an area 374 the width of a standard post card in accordance with USPS requirements, is centrally formed in third section 363. Area 374 formed between perforations 372 and 1373 is divided approximately one-third of its height by fold line CC to provide a first face 377 of a post card and a second area 378 which can be folded along fold line CC to form a portion of a second, reverse face of the post card. First face 377 provides an area (shown within dots) which can receive variable information printed by the single pass through a simplex, non-impact printer, to identify the addressee or contents of the mailer. Second area 378 formed opposite fold line CC from area 377 can receive return information for the return receipt post card portion. Second area 378 is preferably printed in an inverted configuration relative to the information printed of first face 377 so that when second area 378 is folded along fold line CC, it mates with the corresponding preprinted area on the opposite face of top ply 360. For sending the mailer with a two-ply return receipt post card attached thereto, tab 372A defined within the left-shown outer edge of third section 363 and perforation 372 and fold line CC and perforation BB', and tab 373A defined within the right-shown outer edge of third section 363, perforation 373, perforation BB', and fold line CC, can receive encapsulated adhesive on top ply 360. These adhesive-receiving areas on tabs 372A and 373A allow the tabs 372A and 373A to be mated and adhered to a respective corresponding section of top section 391 on back ply 390 (see FIGS. 20 and 21).

Detailed Description Text (70):
FIG. 17 shows the back face of top ply 360, illustrating corresponding back faces of sections 361, 362, and 363 formed by fold line AA and perforation BB'. Also

illustrated are corresponding fold line CC formed in third section 363, perforations 372 and 373 forming the area 374 of standard post card width, and edge perforations 366, 367, 368, and BB forming tear-away areas 366A, 367A, 368A, and 450A, respectively. Cutout window areas 369A, 370A, 371A, and optional window area 410A are shown shifted to the opposite side of top ply 360 in order to illustrate the face as it appears when front face of top ply 360 is viewed by turning it over. Area 374A (within dotted area on both sections 361 and 362) is a blank area which optionally can receive preprinted information to provide an additional page of text. This area 374A can be preprinted if top ply 360 is mated to the back ply only along perimeter edges, i.e., along tear-away areas 366A/366B, 367A/367B, and 368A/450A, to allow the plies to be separated and viewing of their inner faces. If the form is manufactured as a laminated form wherein top ply and back ply are adhered together, this area 374A, as well as the remaining surface of sections 361 and 362 can have permanent adhesive disposed substantially over their entire surface, or receive permanent adhesive disposed substantially over a corresponding opposing surface of the back ply or a third ply disposed between the top and back plies. Also shown are areas 379A and 379B (shaded) which extend from edge to edge, and equidistant from fold line CC. These areas 379A and 379B can receive encapsulated adhesive for folding over the bottom portion of section 363 (below fold line CC) to mate with a corresponding area of third section 363 above fold line CC. It would be understood that only one of the areas 379A or 379B require adhesive. This leaves area 379C, defined above area 379B and within perforations BB', 372 and 373, which can be disposed with permanent adhesive either on its own, or an opposing, mated surface.

Detailed Description Text (72):
FIG. 18 illustrates a variation of the embodiment of the subject invention wherein a back face of top ply 360, as illustrated in FIG. 17, includes a transparent covering 380 over cutout window areas 369A, 370A, and 371A and optional cutout window 410A provided in section 362. FIG. 18 illustrates a preferred embodiment wherein a single sheet of transparent material is disposed between the top and back plies, extending from one side edge to the other, and having a height which is capable of covering all window areas with a single sheet. This single sheet of transparent material advantageously provides a form which is easier to manufacture and less likely to cause jamming of a simplex, non-impact printer. The transparent sheet for covering the cutout window areas can be adhered to an inner face of either ply of the form, preferably the top ply, to seal the cutout window areas from the inner face of the plies, or can be adhered to both, if the form is configured as a single, laminated form.

Detailed Description Text (75):
First and second sections 391 and 392 provide an area 399 for preprinting information (shown within dots), preferably used for preprinted letter text area in a form adhered only along its perimeter edges to provide a form having separable laminations. The placement of these areas for printing text can readily be understood to be modifiable according to the positioning of the window areas in section 392. In a laminated variation of this embodiment, wherein top ply 360 and back ply 390 are not separable from one another such that the inner faces thereof cannot be viewed, area 399 can be substantially coated with a permanent adhesive or can be available for being mated to adhesive disposed on the inner face of top ply 360.

Detailed Description Text (78):
The third section 393 of back ply 390 also includes perforations 402 and 403 spaced from the outer side edges of section 393 such that an area 404 is centrally formed having a width of a standard post card in accordance with USPS requirements. Third section 393 extends from perforation EE to form an area approximately one-half to about two-thirds of the height of a post card of standard size, positionally corresponding to area 379C on top ply 360.

Detailed Description Text (83):
While the invention has been described in its preferred form or embodiment with some degree of particularity, it is understood that this description has been given only by way of example and that numerous changes in the details of construction, fabrication and use, including the combination and arrangement of parts, may be made without departing from the spirit and scope of the invention.

CLAIMS:

1. A two-ply mailer form for use with an automated folder/sealer, and printable by a single pass through simplex, non-impact printer, said form comprising:

a top ply of standard paper size having a top and bottom edge, said top ply comprising a plurality of sections, including at least first and second sections which are foldable to form a mailer portion, and an integral third section having a portion which is foldable so that the third section of the front ply forms a front face of a standard post card and a portion of a back face of the standard post card; and

a back ply having a top and bottom edge and superimposably adhered to said top ply, said back ply comprising first and second sections of identical width and height to said first and second sections of said top ply, and an integral third section having identical width to the third section of said top ply and having its height truncated in relation to said top ply such that the bottom edge of said back ply meets with the bottom edge of said third section of said top ply after said top ply is folded to form the standard postcard.

2. The mailer of claim 1, wherein said top ply has an outer face which can receive variable information printed by a single pass through the simplex, non-impact printer.

4. The mailer of claim 1, wherein one of said first and second sections of front and back plies comprises at least one cutout area providing a window for viewing variable information printed on the outer face of the top ply.

7. The mailer of claim 6, wherein the top and back plies are superimposably adhered only along the tear-away strips such that the top and back plies separate from one another for viewing inner faces thereof.

9. The mailer of claim 1, wherein the postcard is capable of receiving variable information positioned on front and back faces thereof by a single pass through the simplex, non-impact printer, and whereby the variable information positionable on the back face thereof is so positioned by folding a bottom portion of the post card portion onto itself and adhering the folded bottom portion to the back face of the top ply.

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L2: Entry 2 of 4 File: USPT Nov 7, 2000

DOCUMENT-IDENTIFIER: US 6142531 A
TITLE: Universal tamperproof laser identification cards and single pass post cards

Abstract Text (1):
A foldable card for providing information to a user including a backing sheet, a printable sheet and an adhesive material on one side of the printable sheet releasably securing the backing and printable sheets together. The printable sheet includes first and second sections having substantially similar dimensions connected together at a fold line. Information is printable on a side of the first and second sections opposite the adhesive material during a single pass through a printer. When the printable sheet is removed the backing sheet and folded along the fold line, the adhesive material on the first and second sections secures the first and second sections together allowing the information printed on both the first and second section to be viewable. The foldable card may be produced in any shape such as a post card or I.D. tag. When used as an I.D. tag the first section may include a window through which an item between the first and second sections is viewable. First and second tabs extend from a respective one of the first and second sections and include an adhesive material on one side thereof causing them to be secured together when the foldable card is folded along the fold line and slits extending therethrough for receiving a button and releasably securing the folding card to clothing of a user. An extension portion extends from one tab and includes an adhesive material on one side thereof for selectively adhering the foldable card to an object.

Brief Summary Text (3):
The present invention relates generally to labels and, more specifically, to a card including first and second sides connected along a fold line, the first and second sides each having an adhesive material positioned on one side thereof securing the first and second sides together when folded along the fold line. Information may be printed on the side opposite the adhesive material during a single pass through a printer. Furthermore, the first side may include a window extending therethrough whereby when a photo is positioned thereunder and the card is folded along the fold line, the photo is held in position beneath the window. A tab including a plurality of slits extending therethrough may also extend from the first and second sides, the slits acting to releasably secure the identification card to a button on clothing of the user.

Brief Summary Text (9):
A multipart form and label combination is provided which may be printed in a single pass through a printer. The combination includes a face ply which may be printed with nonvariable and variable indicia, a film ply and an optional intermediate liner ply. The combination also includes first, second, or third removable portions such as, for example, a label receipt or postcard. In a preferred embodiment, the multipart form and label combination is used as an inspection form.

Brief Summary Text (13):
A form having detachable labels and a wrist band is provided. The form includes a face ply adhered to a liner ply by a pressure sensitive adhesive. The face ply includes a first portion and a second portion, where the first portion is die cut to form a wristband and a second portion is die cut to form a series of detachable

labels. The form may be printed in a single pass through a printer to provide the wristband and labels with correlating printed indicia.

Brief Summary Text (17):
A multi-part mailing form has two superimposed sheets of material such as paper stock which are secured together in adhered areas by an adhesive layer between the sheets. The inner face of a lower sheet is coated with a non-adhesive material in certain areas so that the sheets are not adhered in these areas. The coated areas of the lower sheet correspond to detachable areas of the upper sheet which can be detached and secured to an item to be mailed. Sections of the form are separable from one another by cutting or by means of tear lines. One of the separable sections has imprinted indicia on the outer face of each sheet and includes a return postcard for confirming receipt of a mailed item.

Brief Summary Text (21):
An assembly for mailing an article requiring special services and a method for mailing same are provided. The assembly includes a single sheet constructed in such a way that one portion of the sheet provides a label and the other portion provides a return postcard or other special service form for attachment to an envelope in its assembled position. The sheet includes a backing to which the portions are attached. The backing may include a section that is cut out to expose one or more of the portions. The return postcard is integrally formed, but removably attached, such that the return postcard remains attached to the envelope until received by the addressee, at which time the return postcard may be removed.

Brief Summary Text (23):
The present invention relates generally to labels and, more specifically, to a card including first and second sides connected along a fold line, the first and second sides each having an adhesive material positioned on one side thereof securing the first and second sides together when folded along the fold line. Information may be printed on the side opposite the adhesive material during a single pass through a printer. Furthermore, the first side may include a window extending therethrough whereby when a photo is positioned thereunder and the card is folded along the fold line, the photo is held in position beneath the window. A tab including a plurality of slits extending therethrough may also extend from the first and second sides, the slits acting to releasably secure the identification card to a button on clothing of the user.

Brief Summary Text (25):
Another object of the present invention is to provide a folding card able to be formed on a multi-ply sheet comprising a printable ply and a backing ply including an adhesive material positioned on one side of the printable ply wherein a plurality of folding cards may be formed on a single multi-ply sheet.

Brief Summary Text (26):
Yet another object of the present invention is to provide a foldable card having first and second sides connected along a fold line wherein information may be printed on both the first and second sides of the printable ply during a single pass of the sheet through a printer.

Brief Summary Text (27):
Still yet another object of the present invention is to provide a foldable card having a window positioned on one of the first and second sides thereof for viewing an item inserted between the first and second sides when the card is folded along the fold line.

Brief Summary Text (28):
Another object of the present invention is to provide a foldable card having a tab extending from at least one of the first and second sides including at least one of an adhesive material positioned on a portion of the tab for selectively adhering

the card to clothing surfaces and a slotted portion having a plurality of various sized slits extending therethrough for receiving a clothing button therethrough.

Brief Summary Text (29):
A still further object of the present invention is to provide a foldable card in the form of a post card having a front side and a back side joined together along a fold line and releasably secured to a sheet by an adhesive material, whereby the side opposite the adhesive material allows for printing an address on the front side and a message on the back side of the foldable card during a single pass through a printer.

Brief Summary Text (31):
The present invention overcomes the shortcomings of the prior art by providing a plurality of removably foldable cards having a printable side and an adhesive side mounted on a backing sheet. The card may include a window covered by a transparent material for viewing an insert, e.g. a photograph, positioned between the first and second sides forming a tamperproof identification card and having a tab extending from at least one of the first and second sides for attaching the card to an article of clothing. The tab may include an adhesive portion for selectively adhering the foldable card to exterior clothing surfaces and/or a slotted portion having a plurality of various sized slits for alternately inserting a clothing button therethrough.

Brief Summary Text (32):
Additionally a second embodiment is provided having a post card releasably mounted to a backing sheet having front and back surfaces of the postcard connected together along a fold line. The printable facing ply of the first and second surfaces face in the same direction thereby permitting printing of the address and message in one pass through a printer. When the post card is removed from the backing sheet and folded along the fold line the adhesively backed surfaces are securely and unattachably engaged.

Drawing Description Text (9):
FIG. 6 is a front view of a plurality of cards of the present invention, each card including information printed on one side thereof and a photo inserted below the window on an opposing side thereof;

Drawing Description Text (12):
FIG. 9 is a front view of a sheet including a plurality of foldable cards of the present invention, each card including a message printed on one side and a mailing address on the other side, the card including an adhesive material on the side opposite the printed information;

Drawing Description Text (13):
FIG. 10 is a back view of the foldable card of the present invention illustrating exposing of the adhesive material on one side thereof;

Detailed Description Text (41):
The foldable card 10 shown adhered to the lapel 12 of the first user 14 includes a face side 20 having a window 22 extending therethrough and a tab 24 extending therefrom. Information 26 may also be printed on the face side 20. An adhesive material is provided on an opposite side of the tab 24. The tab 24 also includes a plurality of slits 28 extending therethrough. The plurality of slits 28 are provided to receive a button 16 on the clothing of a user, e.g. the second user 18. The foldable card 10 is releasably secured to the button 16 by simply sliding the button 16 through one of the slits 28 similar to passing a button through a button hole when closing a garment.

Detailed Description Text (42):
An enlarged view of the foldable card 10 releasably secured to a button 16 on the

clothing 30 of the second user 18 and taken from within the circle labeled 2 of FIG. 1 is illustrated in FIG. 2. The button 16 is passed through one of the slits 28, the slits 28 acting as a button hole, to releasably secure the foldable card 10 thereto. The foldable card 10 will then be able to hang from the button 16 as shown in the figure. The window 22 is preferably covered by a sheet of transparent material 32. Positioned behind the window 22 and viewable through the transparent material 32 is an item of information such as a photograph 34 providing additional identification information about the user. A back side of the photograph 34 is positioned between the transparent material 32 covering the window 22 and a back side of the folding card 10. The back side is adhered to the face side 20 for retaining the photograph 34 therebetween and positioned beneath the window 22. The back side will be discussed hereinafter with specific reference to FIGS. 3-6 and 8.

Detailed Description Text (43):
An enlarged view of the foldable card 10 releasably adhered to a lapel 12 of the clothing 30 of the first user 14 is illustrated in FIG. 2A. As can be seen from this view, the foldable card 10 includes the face side 20 having the window 22 extending therethrough and the tab 24 extending from one end thereof. Information 26 is also printed on the face side 20 and a photograph 34 is positioned below the sheet of transparent material 32 covering the window 22. An extension portion 36 of the tab 24 is provided extending therefrom on a side of the slits 28 opposite the connection to the face side 20. On an opposite side of the extension portion 36 is an adhesive material for adhering the foldable card 10 to the lapel 12 or any other piece of clothing 30 of the user. The adhesive material on the extension portion 36 will be shown and described in more detail hereinafter.

Detailed Description Text (44):
A full sheet 38 containing a plurality of foldable cards 10 thereon is illustrated in FIG. 3. As can be seen from this figure, the face side 20 of each of the plurality of foldable cards 10 is connected to a back side 40 along a fold line 42. The back side 40 of each foldable card 10 includes a tab 44 extending therefrom on a side opposite the fold line 42 and a plurality of slits 46 extending through the tab 44. The back side 40 is substantially identical in dimensions to the face side 20. However, the back side 40 does not include an extension portion 36 extending from an end of the tab 44. This figure shows the top side 48 of the foldable cards 10 on which information may be printed on a single pass through a printer to print the information on both the front and back of each foldable card 10. On a bottom side of each foldable card 10 opposite the top side 48 and releasably securing the foldable card to the sheet 38 is an adhesive material as will be described hereinafter.

Detailed Description Text (45):
A view of a full sheet 38 containing a plurality of folding cards 10 is also illustrated in FIG. 4. This figure illustrates the folding cards 10 including information 26 printed on the front and back sides 20 and 40, respectively. One of the folding cards 10 is shown being removed from the sheet 38 in the direction of the arrows labeled with the numeral 48 to expose the adhesive on the bottom side of the folding card 10. When a photograph is positioned below the transparent material 32 covering the window 22 and the front and back sides 20 and 40, respectively, are folded along the fold line 42, the adhesive material on the opposite side of the front and back sides 20 and 40 is caused to adhere together. The photograph 34 will thus be retained therebetween and in position beneath and viewable through the transparent material 32 covering the window 22. The tab 42 will align with the tab 24 such that the plurality of slits 46 match with the plurality of slits 28. The extension portion 36 of the tab 24 will extend beyond the length of the tab 42 thus providing an adhesive surface for adhering the folding card 10 to an article of clothing. As the front and back sides 20 and 40 are facing in the same direction when in an open position on the sheet 38, information can be applied to both the front and back sides when the sheet 38 is passed through a printer only a single

time. Thus, the sheet 38 and/or each individual folding card 10 need not be passed through a printer twice, once on each side.

Detailed Description Text (46):
A view of the back side 48 is illustrated in FIG. 5. From this view the adhesive material 50 on the bottom side of the front and back sides 20 and 40 is seen. The adhesive material 50 covers all of the bottom side 48 of the front side 20 except for the portion covered by the window 22 and all of the bottom side 48 of the back side 40. Alternatively, the adhesive material 50 may be positioned on the bottom side 48 of only one of the front and back sides 20 and 40. A cover 52 is positioned to cover the adhesive material on the extension portion 36 and is removed prior to adhering the folding card 10 to a piece of clothing. A photograph 34 is illustrated being positioned below the window 22 and when the folding card 10 is folded along the fold line 42, the adhesive material 50 will cause the front and back sides 20 and 40 to adhere together holding the photograph 34 in position therebetween. In this position, the tabs 24 and 44 are aligned and the slits 28 and 46 therein are also in alignment for receiving a button therethrough. The extension portion 36 extends beyond the tabs 24 and 44 when stuck together and upon removal of the cover 52 can be used to adhere the folding card 10 to a piece of clothing. The extension portion 36 may be connected to the tab 24 by perforations 54 and thus can be easily removed therefrom when it is desired to secure the folding card 10 to a button as opposed to adhering the extension portion 36 to a piece of clothing.

Detailed Description Text (47):
The top side of a number of folding cards 10 are illustrated in FIG. 6 in an open position wherein the front and back sides 20 and 40 are not adhered together. From this view it is readily seen that information may be printed on the front and back sides 20 and 40 during a single pass through a printer. The information on the back side 40 is printed to the left of the fold line 42 and the information on the front side 20 is printed to the right of the fold line 42. The photograph 34 is positioned below the transparent material 32 covering the window 22. The perforations 54 connecting the extension portion to the tab 24 are also clearly seen. The extension portion 36 is thus easily removed from its connection to the tab 24 by tearing along the perforations 54 when it is desired to secure the folding card using the slits 28 and 46 in the tabs 24 and 44.

Detailed Description Text (51):
FIGS. 9-13A illustrate the foldable cards of the present invention as a postcard. FIG. 9 illustrates a multi-ply sheet 60 including two postcards 62 thereon. The post cards 60 are releasably connected by a perforated line 61. A front surface 64 and a back surface 66 of each postcard 62 can be seen from this view. The post cards 62 are removably mounted onto the sheet 60 having the front and back surfaces 64 and 66, respectively, separated by a fold line 68 forming a printable facing ply thereby permitting printing of an address on the front side 64 and a message on the back side 66 in one pass through a printer. An adhesive material is positioned on an opposite side of the front and back surfaces 64 and 66, respectively, whereupon the post cards 60 are separated from each other by tearing along a perforation line and removed from a backing ply. When the post cards 60 is folded along the fold line 68 the adhesive on the bottom of the front and back sides will be caused to adhere together and become securely and unattachably engaged to form a mailable post card.

Detailed Description Text (54):
The method of forming an information and post cards of the present invention will now be described with reference to the figures. A plurality of information cards may be provided on a single multi-ply sheet. The multi-ply sheet includes a backing layer and a printable layer. The printable layer includes a top printing surface and a back surface containing an adhesive material thereon. The adhesive material acts to releasably secure the printable layer to the backing layer.

Detailed Description Text (56):
When in the form of a tag, the printable layer may be of any geometrical shape and preferably includes a window extending through one of the front and back sides for placement of an item containing information about the user therebehind. A tab may also be provided to extend from the front and back sides, the tab extending from the front being of substantially similar dimensions to the tag extending from the back side. The tab extending from the front side may include a removable extension portion including an adhesive material on one side thereof for use in adhering the tag to an object or article of clothing. The tabs extending from the front and back sides also include a plurality of different sized slits extending therethrough for receiving a button and thereby attaching the card to an article of clothing.

Detailed Description Text (59):
Once the information is printed on the front and back sides of the card, the card is removed from its adherence to the backing sheet thereby exposing the adhesive material. If one side of the card includes a window, an item of information desired to be viewed through the window is positioned such that the information is placed against and viewable through the transparent material covering the window. The front and back sides are then folded along the fold line such that the adhesive material on the front side engages the adhesive material on the back side thereby adhering the front and back sides together. If an item was positioned to be viewed through the window, the adherence of the front side to the back side retains the positioning of the item viewable through the window. The information printed on the front and back sides is viewable to a person viewing the card and the card need only be passed through a printer only one time.

Detailed Description Text (60):
From the above description it can be seen that the foldable cards of the present invention is able to overcome the shortcomings of prior art devices by providing a foldable cards which is able to be formed on a multi-ply sheet comprising a printable ply and a backing ply including an adhesive material positioned on one side of the printable ply wherein a plurality of folding cards may be formed on a single multi-ply sheet. Each foldable card includes first and second sides connected along a fold line wherein information may be printed on both the first and second sides of the printable ply during a single pass of the sheet through a printer and a window positioned on one of the first and second sides thereof for viewing an item inserted between the first and second sides when the card is folded along the fold line. Each foldable card may also have a tab extending from at least one of the first and second sides including at least one of an adhesive material positioned on a portion of the tab for selectively adhering the card to clothing surfaces and a slotted portion having a plurality of various sized slits extending therethrough for receiving a clothing button therethrough. Alternatively, the foldable card can be in the form of a post card having a front side and a back side joined together along a fold line and releasably secured to a sheet by an adhesive material, whereby the side opposite the adhesive material allows for printing an address on the front side and a message on the back side of the foldable card during a single pass through a printer. Furthermore, the foldable cards of the present invention are simple and easy to use and economical in cost to manufacture.

CLAIMS:

1. A foldable card for providing information to a user, said foldable card comprising:

a) a backing sheet;

b) a printable sheet having a first section and a second section connected together at a fold line, said first and second sections having substantially similar dimensions;

c) an adhesive material positioned on one side of said printable sheet for releasably securing said printable sheet to said backing sheet, wherein information is printable on a side of said first and second sections opposite said adhesive material during a single pass through a printer and when said printable sheet is removed from engagement with said backing sheet and folded along said fold line, said adhesive material on said first and second sections is caused to adhere said first and second sections together allowing the information printed on both said first and second sections to be viewable;

d) first and second tabs extending from a respective one of said first and second sections;

e) an extension portion extending from said first tab, said extension portion extending beyond said second tab when said foldable card is folded along said fold line and includes an adhesive material on one side thereof for selectively adhering said foldable card to an object.

3. The foldable card as recited in claim 1, wherein one of said first and second sections includes a window through which an item positioned between said first and second sections is viewable.

7. The foldable card as recited in claim 1, wherein at least one of said first and second tabs include an adhesive material positioned on one side thereof.

9. The foldable card as recited in claim 8, further comprising at least one slit extending through both said first and second tabs for receiving a button therethrough to releasably secure said foldable card to an object.

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